

TESTED: .28 Nosler in the M48!

RIFLE

Sporting Firearms Journal

BATTLE RIFLES:

South American
Mausers

Lee-Enfield

The Truth
About

**BORE
EROSION**

OPTICS:

Make Your Scope
Fit the Rifle

50+ Years with the
.223 Remington!

DAKOTA ARMS SHARPS
"LIGHTWEIGHT"
30-40 Krag

May 2015

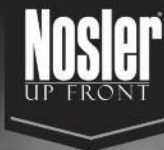
No. 280

\$5.99



Display until 6/13/15 Printed in USA

\$5.99 U.S./Canada



**INTRODUCING 28 NOSLER.
FLAT OUT, LIGHTS OUT—NOW IN 7MM.**

Lightning strikes again, this time even harder. The latest addition to the Nosler Cartridge Series is here to dominate anything that stands in its way. Pushing a 160 gr. Nosler AccuBond® to 3300 fps, the new 28 Nosler breaks barriers—and hearts.



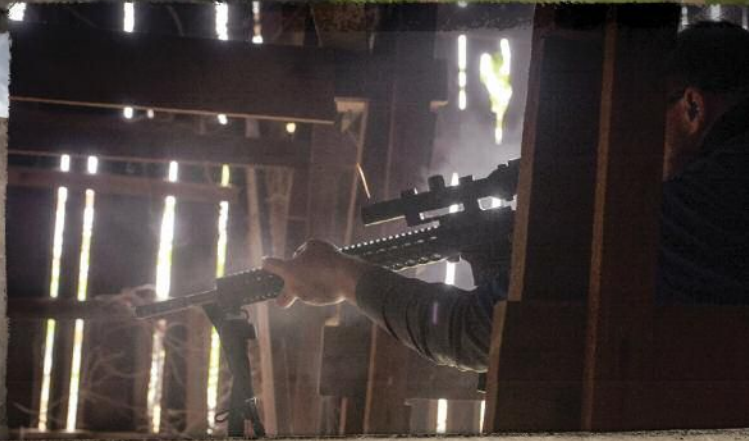
THE NEW HERD BULL





YOU PRACTICE AND RE-PRACTICE.
OBSESS OVER DETAIL AFTER DETAIL.
ALL IN SEARCH OF PERFECTION.

NOTICE A PATTERN HERE?



NEW IMR® 4166™ WITH ENDURON™ TECHNOLOGY.
MAKE IT PART OF YOUR ROUTINE.

Stable, even after exposure to extreme temperature swings. Precise, even when you've already put a few rounds down the tube. It's a new habit that will become as familiar as ringing steel.

Phone 913-362-9455

www.imrpowder.com

IMR
LEGENDARY POWDERS

On the cover . . . The Limited Edition Remington 700 SF .223 Remington features a Redfield 3-9x scope; above it is a Nosler M48 .28 Nosler with a Leupold variable; below is a Dakota Arms Sharps .30-40 Krag.



Volume 47, Number 3
ISSN 0162-3593

- 6 Trajectory**
Spotting Scope -
Dave Scovill
- 12 Cast Bullets, the**
Other Premium
Hunting Bullet
Mostly Long Guns -
Brian Pearce
- 14 Safety and Safeties**
Down Range -
Mike Venturino
- 16 .300 Remington**
Short Action
Ultra Mag
Classic Cartridges -
John Haviland
- 18 Working on the**
Ruger 10/22
Light Gunsmithing -
Gil Sengel
- 22 Scopes, Mounts**
and Stock Fit
A Rifleman's Optics -
Lee J. Hoots

- 24 .223 Remington**
Celebrating 50+ Years
As a Varmint Cartridge
Stan Trzoniec
- 30 .28 Nosler**
Shooting a New
7mm Magnum
Brian Pearce
- 36 Bore Erosion**
The Truth About
Shot-Out Barrels
John Barsness
- 42 Dakota Arms Sharps**
A "Lightweight" .30-40 Krag
John Haviland
- 48 How the Lee-Enfield**
Saved Paris
The Star of Mons
Terry Wieland
- 56 The Other Mausers**
South America had
its own variations.
Mike Venturino
- 62 What's New in**
the Marketplace
Inside Product News -
Clair Rees
- 70 Sling, Slang, Slung**
Walnut Hill -
Terry Wieland

Issue No. 280

May 2015

RIFLE
Sporting Firearms Journal

Publisher/President – Don Polacek
Publishing Consultant – Mark Harris
Editor in Chief – Dave Scovill
Editor – Lee J. Hoots
Managing Editor – Roberta Scovill
Senior Art Director – Gerald Hudson
Production Director – Becky Pinkley

Contributing Editors

John Haviland	John Barsness
Brian Pearce	Stan Trzoniec
Clair Rees	Mike Venturino
Gil Sengel	Ken Waters
Terry Wieland	

Advertising

Advertising Director - Tammy Rossi
tammy@riflemag.com

Advertising Representative - Tom Bowman
bowman.t@sbcglobal.net

Advertising Representative - James Dietsch
jamesdietsch@cox.net

Advertising Information: 1-800-899-7810

Circulation

Circulation Manager – Kendra Newell
circ@riflemag.com

Subscription Information: 1-800-899-7810
www.riflemagazine.com

Rifle® (ISSN 0162-3583) is published bimonthly with one annual special edition by Polacek Publishing Corporation, dba Wolfe Publishing Company (Don Polacek, President), 2180 Gulfstream, Ste. A, Prescott, Arizona 86301. (Also publisher of *Hand-loader*® magazine.) Telephone (928) 445-7810. Periodical Postage paid at Prescott, Arizona, and additional mailing offices. Subscription prices: U.S. possessions – single issue, \$5.99; 6 issues, \$19.97; 12 issues, \$36. Foreign and Canada – single issue, \$5.99; 6 issues \$26; 12 issues, \$48. Please allow 8-10 weeks for first issue. Advertising rates furnished on request. All rights reserved.

Change of address: Please give six weeks notice. Send both the old and new address, plus mailing label if possible, to Circulation Department, *Rifle*® Magazine, 2180 Gulfstream, Suite A, Prescott, Arizona 86301.

POSTMASTER: Send address changes to *Rifle*®, 2180 Gulfstream, Suite A, Prescott, Arizona 86301.

Canadian returns: PM #40612608. Pitney Bowes, P.O. Box 25542, London, ON N6C 6B2.

Wolfe Publishing Co.
2180 Gulfstream, Ste. A
Prescott, AZ 86301
Tel: (928) 445-7810 Fax: (928) 778-5124
© Polacek Publishing Corporation



Publisher of *Rifle*® is not responsible for mishaps of any nature that might occur from use of published loading data or from recommendations by any member of The Staff. No part of this publication may be reproduced without written permission from the publisher. All authors are contracted under work for hire. Publisher retains all copyrights upon payment for all manuscripts. Although all possible care is exercised, the publisher cannot accept responsibility for lost or mutilated manuscripts.

Swift

SCIROCCO II®

.308-180 Grain | 2.5x expansion

A-FRAME®

.308-180 Grain | 2.2x expansion

TERMINAL PERFORMANCE

3300+ fps.

84%+
Wt. Ret.
.704
dia.

95%+
Wt. Ret.
.670
dia.

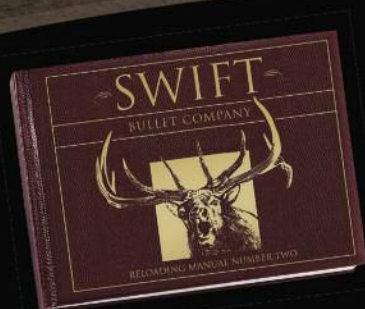


Swift bullets are the best hunting bullets made!

For twenty five years, Swift Bullet Company's innovative designs and construction have led the way in bonded core hunting bullet technology. Whether you choose Swift A-Frame® or Scirocco®, with the signature black polymer tip, you get terminal performance without equal and excellent accuracy. A-Frame® and Scirocco® bullets provide the best performance for hunting any game species anywhere in the world.

Bullets without equal.

Swift
BULLET COMPANY



SWIFT RELOADING MANUAL NUMBER TWO
Now Available!

See website for details.

785-754-3959 | www.swiftbullets.com



TRAJECTORY

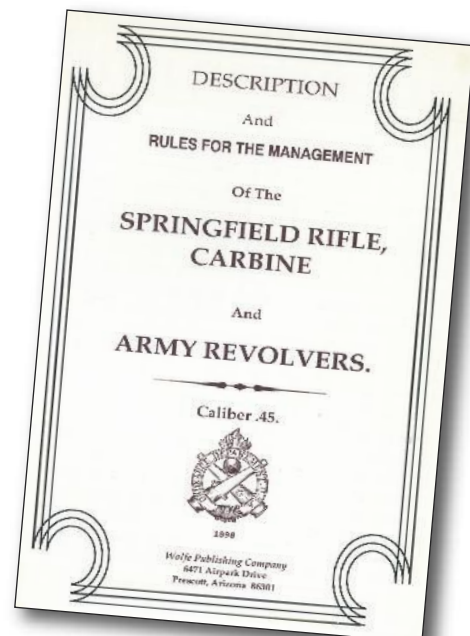
SPOTTING SCOPE by Dave Scovill

Back in 1991, Wolfe Publishing Co. reprinted a booklet titled *Description and Rules for the Management of the Springfield Rifle, Carbine and Army Revolvers. Caliber .45*. The booklet is now out of print, but the original, printed in 1898, basically reaffirms the techniques and practices that had been in use by the U.S. Army since it adopted the Model 1873 Springfield rifle, Colt Single Action Army and Schofield-Smith & Wesson revolvers in 1872-73.

The first 46 pages of the book contain a description of the parts and assembly of the Model 73 Springfield Rifle, Carbine and Officers' Model of 1875. Unless a reader has a special interest in such things, it is pretty dull reading. Still the mechanics of the rifle are revealing, and for some of us, quite interesting.

The next section is titled "Memoranda of Trajectory." This is when things get interesting, especially

the summary of accuracy out to 1,000 yards for the rifle and carbine. (See nearby table, "Radius of circle of shots.") Strangely, nowhere is there any mention of the number of shots, but given the U.S. military's propensity for extensive testing, the number of shots was most likely 10 – or more. At any rate, the radius refers to the average distance from the center of a circle for all the shots. Essentially, it describes the greatest distance any given shot will land from the center of the group, although any given group contains a number of shots that are somewhat or much closer to the center. If the target is a man on a horse at any range given in the table, he might consider seeking cover. Either way, a plains buffalo (bison) standing broadside at, or beyond, 500 yards would be a relatively easy target for an experienced hide hunter armed with a Sharps or a Springfield rifle, especially since the hide hunter had the luxury of



cleaning or at least wiping the barrel at his leisure between shot strings or after every shot. Not so in the military.

Of course, black powder was the du jour of the day, and the table reveals what might be called remarkable performance, considering that most folks nowadays consider the black stuff pure evil – from what I read in the "show-and-tell" press – and are effectively lost if they can't use a rangefinder and fiddle with scope knobs in an effort to lob a bullet into a barn door at 600 yards using any one of a slew of smokeless wonder cartridges.

Comments describe the best average for the Springfield rifle at 500 yards is 2.8 inches and 3.4 inches for the carbine. At 800 yards, best averages are 8.5 inches (rifle) and 11.9 inches (carbine). Muzzle velocity for the rifle bullet is given as 1,315.7 fps and the carbine bullet at 1,150 fps. Pressure for the black-powder loads is 25,000 foot-pounds. The booklet goes on to cover force of impact, penetration in white pine, recoil,

Lilja

Shooters using Lilja .22 rimfire barrels at the 2012 London Olympics won Gold, Silver and Bronze medals

If you want to shoot like a champion, choose Lilja!



Gold Medal
Niccolo Campriani
Italy
Men's 3-Position
New Olympic Record (1278.5 points)
Bleiker Rifle
Lilja Barrel
www.bleiker.ch/



Silver Medal
Lionel Cox
Belgium
Men's 50-Meter Rifle Prone
Grunig Elmiger Rifle
Lilja Barrel 4 Grooves
Twist 16"



Bronze Medal
Matt Emmons
U.S.A.
Men's 3-Position
Three-Time Olympic Medal Winner
Anschutz 2000 Series Rifle
Lilja Drop-In Barrel

www.riflebarrels.com
Lilja Precision Rifle Barrels, Inc.
P.O. Box 372, Plains, MT 59859
Tel: 406-826-3084 • Fax: 406-826-3083

RUGER AMERICAN RIMFIRE® AN AMERICAN LEGEND CONTINUES



Power Bedding® Integral Bedding Blocks
for Outstanding Accuracy



Ruger Marksman
Adjustable™ Trigger
Provides a Crisp
Release with a
User-Adjustable
3-5 lb. Trigger Pull



Easy-to-
Actuate
Tang
Safety

MODULAR STOCK SYSTEM

INCLUDED WITH STANDARD MODELS



Low Comb
Standard Pull



High Comb
Standard Pull

INCLUDED WITH COMPACT MODELS



Low Comb
Compact Pull



High Comb
Compact Pull

All Stock Modules are Interchangeable Across All Models and Available at ShopRuger.com

- ★ 22 LR
- ★ 22 WMR
- ★ 17 HMR



Threaded Barrel Models Available in All Calibers

Detachable
10/22®-Style
Rotary Magazine
Provides
Reliable Feeding



Standard Model

Compact Model

The 100% American-made Ruger American Rimfire® bolt-action rifle builds on the enormous success of the centerfire Ruger American Rifle®. With many of the standard Ruger American Rifle® features, this new line also combines several design innovations from the popular 10/22® rimfire rifle. This combination, along with the rifle's adaptability, will appeal to all bolt-action enthusiasts – young or old, novice or experienced.

Radius of circle of shots.

Range.	Rifle.	Carbine.	Range.	Rifle.	Carbine.
	Inches.	Inches.		Inches.	Inches.
100 yards.....	1.3	1.7	800 yards.....	13.8	23.50
200 yards.....	2.7	4.2	900 yards.....	17.0	26.00
300 yards.....	4.2	6.5	1,000 yards.....	21.4	
400 yards.....	5.8	9.0	1,100 yards.....		
500 yards.....	7.6	11.7	1,200 yards.....		
600 yards.....	9.5	15.5	1,300 yards.....		
700 yards.....	11.6	19.0			

CARBINE AGAINST INFANTRY AND CAVALRY.

Distance on line of sight.	Rising branch of trajectory.		Falling branch of trajectory.				Maximum continuous dangerous space.		Total.	
			In front.		In rear.					
	Infy.	Cavalry.	Infy.	Cavalry.	Infy.	Cavalry.	Infy.	Cavalry.	Infy.	Cavalry.
	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.
100 yards---	all.	all.	all.	all.	58	90	158	190	168	190
200 yards---	all.	all.	all.	all.	54	82	254	282	254	282
300 yards---	39	all.	65	all.	41	59	106	359	145	359
400 yards---	23	63	39	60	32	44	71	104	94	167
500 yards---	15	48	27	42	24	32	51	74	66	122
600 yards---	11	37	22	32	19	27	41	59	52	86
700 yards---	8	28	18	25	16	23	34	48	42	76
800 yards---	7	23	13	20	14	20	27	40	34	63
900 yards---	6	19	11	17	11	16	22	33	28	52
1,000 yards---	5.5	16	10	15	10	14	20	29	25.5	45
1,100 yards---	5	14	8	11	8	11	16	22	21	36
1,200 yards---	4.5	12	7	10	7	10	14	20	18.5	32
1,300 yards---	4	11	6	9	6	9	12	18	16	29

The "Dangerous Space" for this table is shown graphically below.

time of flight, maximum range and ordinates of the trajectory above line of sight for the rifle and carbine.

The next subhead is "Dangerous Space." To avoid any confusion, I'll quote:

The dangerous space is calculated under the assumption that the gun,

when fired, is 56 inches from the ground; that it is aimed at a point 34 inches from the ground, and that the stature of a man is 68 inches, and that the head of man on horseback is 8 feet above the ground.

It should be borne in mind that these measurements are conventional. Owing the ricochet frequently causing

the ball to rise at about the angle of the fall, when small, the dangerous space may be considered as nearly double that given in the following tables.

The dangerous space is of course increased by the firer lying down and aiming at his adversary's feet. Aiming at the enemy's feet 404 yards distant, the rifle gives a continuous dangerous space at that distance.

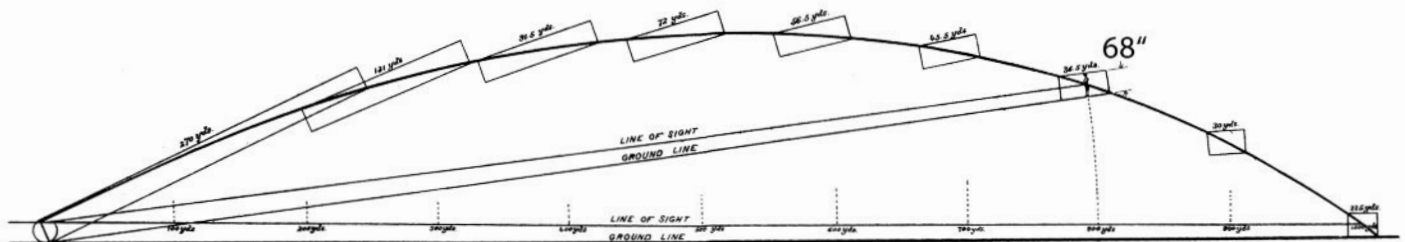
The column of maximum continuous dangerous space is the most important to the marksman, since it indicates approximately double the maximum margin of error in estimating distances for the different elevations. For example: In aiming with a 500-yard sight, the enemy may be about 35 yards on either side of the 500-yard point and may still be struck, if the circumstances of firing are as above indicated.

When the rear sight is set for a range of 255 yards, a foot soldier is covered at all distances between that point and the firer. He will also be struck at 60 yards beyond that point.

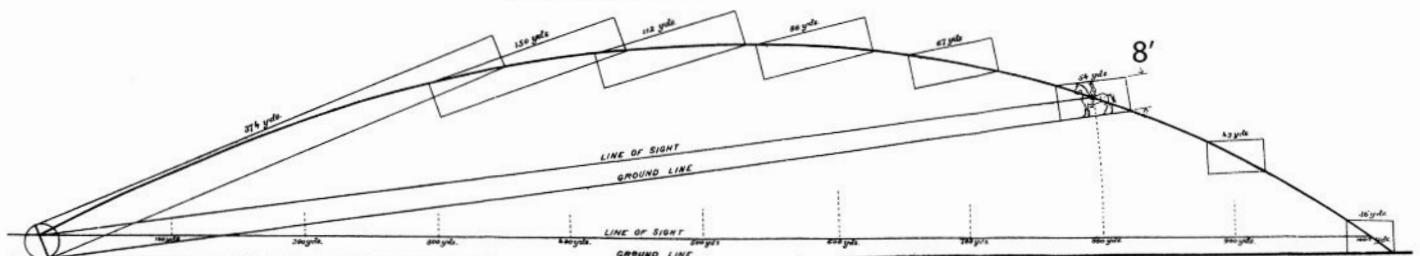
This distance of 255 yards may be termed the range corresponding to the maximum dangerous space.

On this account the men should be habituated in firing with the sight fixed at that mark corresponding approximately to this range, and should be taught that with this elevation their fire will be generally the most effective for medium-range firing.

dangerous space shown for infantry.



dangerous space shown for cavalry.



"WHETHER YOU ARE HUNTING, SHOOTING LONG RANGE, OR USING IT AS A RESPONSIBLE ARMED CITIZEN, THERE IS NO BETTER AMMO"

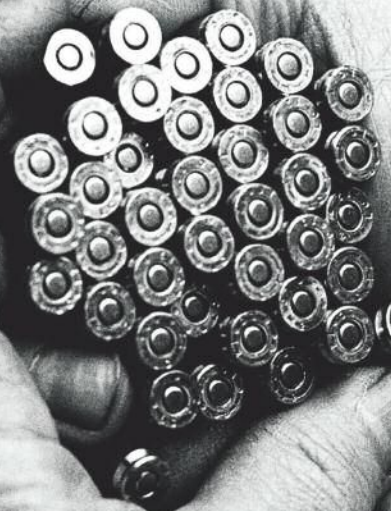


BILL RAPIER
AMERICAN TACTICAL
SHOOTING INSTRUCTION, LLC
US NAVY, RETIRED



Ammunition

www.black-hills.com | 605.348.5150



The range corresponding to the maximum dangerous space against cavalry is 310 yards. There is a further dangerous space beyond the object of 72 yards.

The range corresponding to the maximum dangerous space against infantry is 247 yards. There is a further dangerous space beyond the object of 55 yards.

To construct a trajectory by this method, lay off a right line according to any assumed scale, a distance corresponding to any range the trajectory of which desired. At the extremity of this line erect a perpendicular to it. On this perpendicular from the first line lay off a distance, according to any assumed vertical scale, equal to the drop of the projectile during the time of flight for that range. . . . Through the points thus determined draw the trajectory.

Readers can follow the above directions by plotting points of trajectory taken from various references for any given muzzle ve-

locity (reloading manuals) on graph paper, then cut along the trajectory curve. Then lay the curve at scaled points across a clean sheet of graph paper to see the effect caused by the angle of the barrel as it changes the point of bullet impact along the trajectory at various ranges while shooting slightly up or down from horizontal to represent shooting at a target that is above or below the shooter's position. Studying the resultant changes in point of bullet impact caused by shooting up or downhill with high-velocity cartridges, the changes caused by aiming at any angle other than horizontal is slight compared to the table given for the .45-70. (Actual bullet drop when shooting up or downhill is represented by a right triangle, with the hypotenuse or angled distance to the target at an angle and the lower/horizontal leg [side A] being the distance used to compute trajectory.)

However, shooting a .30 WCF

loaded with a 150-grain bullet at 2,200 to 2,400 fps, for example, shows how folks can be fooled by the relatively parabolic trajectory for this cartridge if the shooter simply drops to a prone position, assuming the rifle/carbine has been sighted in at the horizontal at the local range. The same effect may be applied by shooting slightly uphill or downhill. Analysis shows that shooting at a 12-inch heart/lung area on a deer, for example, allows a point blank shot out to 200 yards or slightly beyond where the sights may be set at 125 to 150 yards, and pretty much shoots a big hole in the notion that trajectory for the old cartridge limits the effective range with open sights to 150 yards, and not one step farther.

A further example was demonstrated by the Winchester Model 1886 .50 Black Powder Express load used in Africa that was topped off with a 470-grain cast bullet over 105 grains of Swiss 1½ Fg.



S&K Scope Mounts

Top-quality mounts for popular ex-military rifles with no drilling or tapping necessary. We also have a wide selection of custom-ized bases for sport rifles.

70 Swede Hollow Rd. • Sugar Grove, PA 16350
800.578.9862 • 814.489.3091 • FAX 814.489.7730
www.scopemounts.com

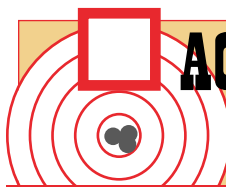
Velocity for 10 shots averaged 1,470 fps, with 4 fps extreme spread, effectively allowing a point-blank hold to 200 yards with the rear sight set at 150 yards. Of course, that fact was proven by extensive trials prior to the hunt, where bullet drop at 50 yards or so beyond a 150-yard zero wasn't much more

than the width of my hand. With the sights set at 50 yards, the lungs of a Cape buffalo proved to provide a very large "kill zone" – even at ranges from 25 to something over 100 yards as the bull ran by.

All the above explains why friend Pete Kibble, a professional hunter in Namibia, once proclaimed, following a dismal demonstration of marksmanship by one of his hunters, that the average tyro from the states simply has no idea how flat most modern rifle cartridges shoot and subsequently ends up shooting over the back of the animal – or worse, hitting the animal high in the lungs, or between the lungs and spine, either of which can result in a drawn-out tracking job. From my perspective, as one of Pete's hunters, those errant shots were also the result of two other factors.

First, as a rule, most hunters never shoot over 100 yards at the range, and more importantly, have little or no idea of how to judge the range in unfamiliar terrain, where a typical 150-yard shot can look like 300 across an open plain. The problem is often compounded by the fact that until you see them dead, on the ground, most folks have no idea how to use the size of an animal to help judge distance. I had to ask my friend and PH Martin Pieters, "How big is a lechwe?" prior to the shot with the .50 BPE at one standing at what appeared to me to be something around 200 yards out in the middle of a shallow river. Martin responded, "About like your mule deer," which confirmed my guess of around 200 yards, and I still had the tendency to hold a tad high, in case my estimate was short, breaking both shoulders, but a bit high, through both lungs. (See the video *10 Days in Africa*.)

Having studied the tables above, and shooting that rifle extensively prior to the safari, I should have known better and used the "danger zone" for that load beyond 200 yards and held more closely to where I wanted the bullet to hit. In

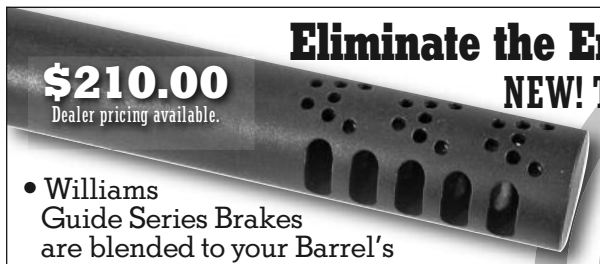


Accuracy in A Jar! Pro-Bed 2000

The Ultimate Stock Bedding Epoxy
www.scorehi.com

SCORE HIGH GUNSMITHING
Featuring: Stockwork • Accurizing • Custom Rifles

Toll Free: 800-326-5632 • Tel: 505-292-5532 • Fax: 505-292-2592



Eliminate the Enemy - Recoil

NEW! Tactical Rifle Brake
Reduce Recoil by **65%** on most .30 Caliber Rifles!

- Williams Guide Series Brakes are blended to your Barrel's contour so they look like part of the barrel.
- Varmint and Tactical Brakes have no holes in the bottom for prone shooting.

7389 Lapeer Rd. • Davison, MI 48423
1-800-530-9028 • 1-810-653-2131
www.williamsgunsight.com

WILLIAMS
GUN SIGHT COMPANY, INC.

Levergun Leather Works

www.levergunleather.com



PO Box 33
Athol, ID 83801
(208) 683-9150

**Quality, Custom, Hand made
Leather products for your hunting
and sporting needs.**

worst case, a low shot would have taken out the heart. Had a rangefinder been available, the shot could have been taken with more confidence, but owing the traditional nature of the hunt with a black-powder rifle, I refused to take a rangefinder and rarely used a binocular.

For most folks using open sights, a rangefinder may be a big help, assuming the terrain allows a shot at over 150 yards. By plotting the trajectory curve on graph paper as described above, it is fairly easy to pinpoint bullet placement at what might be considered by some to be extreme range. Folks use a rangefinder with flat-shooting, whiz-bang cartridges all the time, so I'm told, and they would be equally applicable to hunting with iron sights on a .30 WCF or a .45-70, the latter of which packs plenty of wallop for most game at distances well beyond those commonly associated with finite shot placement using open sights.

I will also admit to being a bit hardheaded about the use of a rangefinder when hunting small game or varmints locally, since it makes more sense (to me) to learn to judge distance, just in case the animal is likely to bolt before there is time to use a rangefinder prior to taking the shot. Nowadays, it seems some folks don't mind fiddling and fooling with scope knobs and rangefinders prior to shooting, but it drives me nuts! If you listen to, or read, all the gobbledygook about rangefinders and scopes, one has to wonder how the pioneers in this country and Africa managed to feed themselves using lever-action and bolt-action rifles with iron sights.

Since the name of this magazine is *Rifle*, I won't go into the details, but for folks who might like to compare the trajectory chart for their favorite hunting handgun, the tables and charts for the .45-70 might ring a few bells. Of course, the same principles apply to muzzle-loaders, with or without scopes. **R**

COLOR CASEHARDENING WOOD & BONE CHARCOAL METHOD

WRITE OR CALL
FOR INFORMATION

MICHAEL HAGSTROM
SANTA ROSA, CA 95402



P.O. BOX 8
(707) 544-4832

Custom Brass and Bullets

Brass • Bullets Reloading Dies

Southwest Dealer for GS Custom Bullets

928-387-2222

www.custombrassandbullets.com

It's the Porsche of the ammunition world.

The ammunition made by Germany's RWS is, in our opinion, the most precise in the world...crafted with attention to detail extraordinary even by German standards. Every batch must pass 100 different quality checks, and 11 test firings. Once you use RWS, you'll never settle for less. Fortunately, we can keep you supplied.



Fine guns, accessories, sights,
mounts and gunsmithing

741 Main Street
Claremont, NH 03743 (603) 287-4836
email: info@necg.ltd.com
newenglandcustomgun.com

We carry a large inventory of superb
German sights, mounts, optics and components.
Contact us for more information.



**Using Pacific performance parts in your rifle is
like putting a Hemi in your hotrod!**



Performance firing pin assy • 1 pc. replacement bolts • Sako extractor kits
Custom ground recoil lugs • Bench rest speed screws • Tactical bolt handles
3-position safety shrouds • Bottom metal • Action tooling • Form Tools • End mills
Chamber reamers • Headspace gauges • Bench rest followers

Pacific Tool & Gauge

P.O. Box 2549 • 598 Ave. C • White City, OR 97503

Phone: 1-541-826-5808 • Email: pacpes@medford.net
www.pacifictoolandgauge.com



CAST BULLETS

THE OTHER PREMIUM HUNTING BULLET

MOSTLY LONG GUNS by Brian Pearce

We live in a golden era of superb hunting bullets from many domestic and foreign manufacturers, and when the correct cast bullet design is selected, constructed of proper alloy and used within respective limitations in the field, they too belong on the "premium bullet" list.

Working and growing up on remote Idaho ranches, it was more than 20 miles to the nearest small town and close to 30 miles to the nearest gun shop, which was only modestly stocked with ammunition and components. Ranch work requires long hours, and trips to town were rare. Worse, many trips for the sole purpose of purchasing bullets for handloading and hunting were often fruitless. I was already casting bullets for sixguns and decided that if I was going to keep my saddle rifles shooting, it would be necessary to cast bullets for them too, which initially included .30-30 Winchester, .30-40



Ammunition companies, such as Garrett Cartridges of Texas and Buffalo Bore Ammunition, offer cast bullets in a variety of factory loads and cartridges that are designed specifically for hunting.

Krag, .32 Winchester Special, .348 Winchester, .38-55, .45-70 and others. I also found cast bullets useful in the .30-06, .338 Winchester Magnum and other modern, bottlenecked rifle cartridges but with certain limitations.

I began acquiring a variety of moulds, mostly from Lyman, SAECO/Redding, Hensley & Gibbs, Ohaus, Lachmiller, RCBS and,

during the 1980s, NEI and LBT, experimenting with plain-base and gas-check designs, a variety of bullet weights, alloy content, bullet lubes and various muzzle velocities.

With proper load development, most of my favorite leverguns will stay within one to 2 inches at 100 yards, which is plenty accurate for their intended purposes and usually duplicates jacketed bullet performance. Regardless of caliber, generally the best accuracy is obtained at less than 2,200 fps, but some calibers, rifling systems and bullet designs thrive on velocities ranging from 1,500 to 1,800 fps. When pushed to velocities greater than 2,200 fps, controlling bullet performance becomes somewhat difficult, as they are more prone to break up. Another general observation is that medium- to heavy-for-caliber bullets are generally more accurate when compared to their lightweight counterparts, which is probably mostly due to their greater bearing surface.

Due to cast bullets' usual velocity limits combined with comparatively low ballistic coefficients, they are not ideal for long-range work when compared to modern jacketed bullets with sleek pro-

K:M
PRECISION SHOOTING PRODUCTS
CONTROL. ACCURACY. PRECISION.

hit? miss?

never question your shot again.

long shot confidence with our:

- primer seaters • primer pocket correctors
- arbor presses • flash hole uniformers
- neck turners • case mouth reamers
- & much more...

616.399.7894 See products & buy online @ www.kmshooting.com

files and graceful boat-tails, so they must be used within respective distances. That limit is usually around 200 yards and is within the range that the vast majority of big game is taken.

I have used cast bullets on game in many calibers. Generally speaking, the larger calibers give better results, as they don't rely on expansion to deliver shock, create a permanent wound channel and exit. However, I have taken a number of mule deer using 173-grain bullets from Lyman mould 311041 in the .30-30 Winchester at 2,200 fps, and the results were just as reliable as any 150- or 170-grain cup-and-core jacketed bullet.

When I first became a full-time writer, I showed up on several hunts with rifles loaded with cast bullets. I was amazed to learn that the majority of firearms industry folks had never heard of using



Several companies offer cast bullets as a component, including Oregon Trail Bullet Company, Rim Rock Bullets and Cast Performance Bullet Company.

cast bullets on game, let alone ever tried them. On an extended Texas hog hunt, every animal I shot fell to a single cast bullet fired from a .45-70, which could not be said of any other hunters on the same trip who were using modern, high-velocity cartridges and jacketed bullets. In spite of many of the

shot angles being less than perfect, the cast bullets easily reached the vitals. On a pronghorn hunt, I made a 200-yard shot using a Marlin .38-55 stoked with cast bullets, which was the only clean kill made among nine other hunters, who were all using high-velocity cartridges with jacketed bullet loads.

Hunting dark timber on the continental divide between Idaho and Montana, I managed to kill a respectable bull elk at a quartering angle wherein the bullet had to travel through the paunch, which normally stops common expanding bullets, and ultimately penetrated through the heart/lung area and exited at the point of the shoulder. I had confidence in the arrow-straight penetration of the flatnosed cast bullet to reach and destroy the vitals; otherwise I would not have taken the shot.

(Continued on page 66)

A NEW AIR OF CONFIDENCE

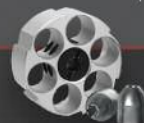
In a New Era of STOPPING POWER

BIG BORE CARNIVORE .35 CAL.



When you've got an appetite for accuracy and game-stopping performance, the Big Bore Carnivore .35 caliber air rifle promises to satisfy. With an effective range of up to 75 yards and a 6-shot rotary magazine, the bolt-action Carnivore provides a dozen field-dominating shots with 95 ft. lbs of muzzle energy from a single charge.

Featuring a fully shrouded QuietEnergy barrel with integrated sound moderator, the Carnivore is as quiet as it is powerful. Also available in .30 caliber.



SERIOUS. SOLID. IMPACT.

info@HatsanUSA.com

HatsanUSA.com

facebook.com/HatsanUSA





SAFETY AND SAFETIES

DOWN RANGE by Mike Venturino

About 35 years ago when hunting, I had a rifle slung over my shoulder as I bulled a path through a thicket. A round was in the chamber and the safety engaged. To be honest, I don't even remember exactly what rifle it was. What is a stark memory is that after exiting the brush, I luckily happened to glance down at the rifle. Some twig or another had flipped the safety off. Seldom after that did I hunt with a round chambered – while moving about on foot, on horseback or in a vehicle.

Already I can hear something like this, “What if you happened upon the biggest bull (or buck) of your life? You would have never gotten a shot.”

So what? I've never put a bullet in something I didn't mean to, either. Uncounted times in my life I've arranged with a partner to walk through a piece of land, but if no game is encountered, to meet up back at the vehicle and go search out another place. Never have I gotten into a vehicle during a day's hunting without opening the bolt and saying aloud, “Action's open,” and I would not get



At the NRA's BPCR Silhouette national championships, every competitor is issued a yellow “open chamber indicator.” It must be in every rifle's chamber, except when the rifle is being fired or cleaned.

into a vehicle with someone else without hearing those words from them.

A friend, who is a genuine tough guy and looks it, used to guide hunters here in Montana. He refused to allow hunters to carry loaded rifles on horses. One guy was determined to defy him. My friend took his rifle from the saddle scabbard, unloaded it and threw the cartridges away. The dude then did as told.

Perhaps the most important of

all safety rules is: “Don't point the muzzle of a firearm at something you are not willing to shoot.” That is good, but rifle muzzles are going to inadvertently sweep something – car, horse, building, dog, people, etc. If the chamber is empty, it is still not polite to let your rifle's muzzle sweep people, but added insurance is having the bolt open so the rest of the world understands it is in safe mode.

At the NRA BPCR Silhouette National Championships during the past 28 years, there have been extremely few times I've worried about someone's rifle. That's because one of the most stringent rules in the game is that a round is not chambered until the “ready” command. Behind the lines and while moving about, every competitor must have what is called an “open bolt” or “empty chamber indicator,” a yellow plastic stick with a flag on the rear. The stick part goes in the chamber, and the flag is visible. It's saying “Look, this rifle cannot be loaded.” The NRA hands out the indicators at all national events.

So someone could ask, “Then,

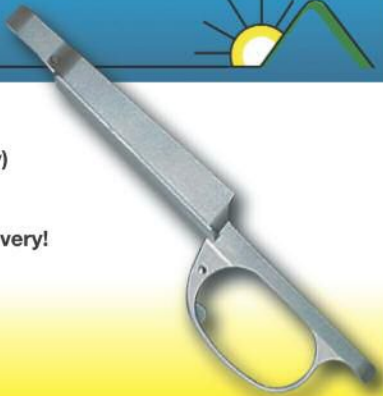
Rifle 280

SUNNY HILL ENTERPRISES

- “Inside the Bow” Floorplate Release
- Models for Hunting and Tactical Rifles (including: Mauser, Rem, Win, Weatherby)
- CNC Machined from bar stock
- Most TGA's also available in Stainless
- Most items IN STOCK for immediate delivery!

Sunny Hill Enterprises, Inc.
Phone: 920-898-4707
Fax: 920-898-4749
Email: triggerguard@sunny-hill.com

www.sunny-hill.com (always remember the dash)



you don't believe in safeties on guns?" Most certainly, I do. Once I quit moving about and take up a spot or get into a blind, a round is chambered and the safety engaged. If someone is familiar with firearms, it takes but a nanosecond to release a safety as the rifle is aimed. Anyone not familiar with firearms shouldn't be messing around with them at all.

Back in the 1980s, it was a dream for Yvonne and me to make a trip to Africa. It was only for plains game, so we spent quite a bit of time on foot or moving about in a land cruiser from one spot to another. The first day when the guide saw that one of my rifles was a Sharps Model 1874, he was mystified. "Where do the cartridges go?" he asked. I said, "It only holds one and that goes in the chamber, but I'm not going to carry it loaded."

He said, "You must carry it loaded, or you won't get a shot off." I said, "I am not going to carry it loaded, because the muzzle is apt to get pointed at you or at my wife." We were at an impasse until I said, "How about this? I will close the rifle's lever just a pinch so that it traps the rim of the round chambered, but by not being fully closed, there is no way the firing pin can hit the round's primer." He grudgingly agreed, and at the end of our stay after shooting five animals with five shots from the Sharps, he admitted that slapping the lever closed as I shouldered the rifle had not caused us to miss an opportunity.

It is perfectly understandable that military and law enforcement people going in harm's way must have rounds chambered. It could mean the difference between life and death to them and their comrades. That's why they train and train, and then train some more.

For us folk who just like to shoot and hunt or compete, a safety on a rifle should just be a backup to the awareness that should be in your brain. 

Harry Lawson, L.L.C.

Since 1965

CUSTOM STOCKS - Finished or semi-finished
Muzzle Brakes, Custom Metalwork

CATALOG \$2.00

3328 N. Richey Blvd., Dept. C, Tucson, AZ 85716 (520) 326-1117



Lawson Classic

- Gas Checked & Plain Base Match Grade Cast Bullets
 - Everything from 7mm to .500 S&W, 20-22 BHN
 - Real Keith Bullets - .357, .41, .44 & .45
- 440, 465 & 500 Gr. in .500 S&W, .460 S&W - 395 Gr.

LEADHEADS
BULLETS

349 NW 100 St. • St. John, KS 67576
Tel: 620-549-6475
Website: www.proshootpro.com

We supply all of CorBon's
cast bullets!



Only \$39.95

Introducing the GRX Recoil Lug for the Ruger 10/22™!

The GRX solves the chronic accuracy problem with the 10/22 platform by focusing the recoil area to a lug similar to a centerfire rifle.

- Eliminates fliers and improves accuracy 15% to 20%
- Simply installed by replacing the barrel retainer, fitting and bedding the lug into the stock (instructions included)

Little Crow Gunworks, LLC

6593 113th Ave. NE, Suite C • Spicer, MN 56288

Tel: (320) 796-0530 • www.littlecrowgunworks.com

NightForce Scopes & Shehane Tracker Stocks

Largest NightForce Inventory in the business allows same day **FREE** shipping. Rings, bases and all NF accessories (including the new 600 & 1000yd. Ballistic Reticles & High Speed Zero Stops). Fifteen years experience in competition and varmint shooting NF scopes allows us to match your needs to the exact scope, reticle and mounting system for your application.

Laminated African Obeche in .025 thin plys and dyed the color of Old World Walnut. Stability and strength of a Laminate along with the look and feel of fine French Walnut. Big game, dangerous game, varmint competition or just plinking. Over 90 stock patterns and inlets for centerfire, muzzle loader and rimfire rifles. We keep over 200 laminated stocks ready to ship now.

D & B Supply
WWW.SCOPEUSOUT.COM
704-824-7511

New Compact, **ATACR**, 15-55 Comp. and **The B.E.A.S.T.** in all reticles.



.300 REMINGTON SHORT ACTION ULTRA MAG

CLASSIC CARTRIDGES by John Haviland

The swift demise of Remington's .300 Short Action Ultra Mag (SAUM) cartridge is a perfect example of the variables that can affect a product's introduction into the market. Remington's entry was only a few months behind Winchester's .300 Winchester Short Magnum in 2001. But that was enough time for Winchester to publicize the advantages of its cartridge and garner eager buyers. Remington attempted to salvage its cartridge with a head-to-head, me-too strategy.

When that proved unsuccessful, Remington modified its approach by creating a new market for its .300 in comparatively lightweight rifles, stating the .300 SAUM chambered in the Remington Model Seven Magnum "creates a groundbreaking combination: The light, compact feel of a short-action rifle with the downrange power previously found only in a long-action magnum round." There was no helping Remington's short .300, however, and a few years after its introduction, Remington ceased chambering the cartridge in its Model Seven and 700 rifles, and Ruger discontinued the cartridge in its Model 77 MK II rifles.



The .300 SAUM's performance is sandwiched between the .30-06 (left) and the .300 WSM (right).

That's unfortunate, because the .300 SAUM developed respectable velocities and accuracy in a 22-inch barreled Model Seven Synthetic Stainless rifle I shot. Initially, Remington offered four loads: 150-grain Core-Lokt Ultra Pointed Soft Points at a stated 3,200 fps, 165-grain Core-Lokt



The .300 Remington SAUM's maximum cartridge length is 2.825 inches compared to the .300 Winchester Short Magnum's maximum cartridge length of 2.860 inches.

Pointed Soft Points at 3,075 fps, 180-grain Core-Lokt Ultra Pointed Soft Points at 2,960 fps and 190-grain boat-tail hollowpoints at 2,900 fps. From the Model Seven's 22-inch barrel, the 150s clocked 3,000 fps and 165s 2,852 fps. The 150-grain is the sole remaining Remington load, but Nosler offers .300 SAUM ammunition in about every style of 150-, 165-, 180- and 200-grain bullet it makes.

Handloads with various powders accelerated velocity when shooting 150- to 200-grain bullets. Powders such as Big Game, IMR-4350 and -4064 fired 150-grain bullets at 3,100 fps and slightly faster. Sierra 165-grain bullets reached close to 3,000 fps fired with Reloder 15 and H-414 and 3,100 fps with IMR-4831. Those speeds are roughly 150 fps faster than the .30-06 shoots the same weight bullets from a 22-inch barrel, but the .300 SAUM required approximately 7 additional grains of the same powders to deliver that increased performance.

The .300 shifted into high gear

Rifle 280

Skinner® Sights LLC

Machined from
Solid Barstock

**Sturdy Sights and More
for Your Rifles!**

P.O. Box 1810
St. Ignatius, MT 59865

Please see our website for more information

WWW.SKINNERSIGHTS.COM

shooting 180-grain bullets. It shot Hornady, Nosler, Sierra and Swift 180s from 2,900 to 2,950 fps. Again, that 200-fps advantage over the .30-06 required about 7 more grains of powder.

As Winchester's short .300 ousted Remington's, the two cartridges beg comparison. Both operate at an average maximum pressure of 65,000 psi. However, the Winchester .300 WSM case is larger with about an 8 percent greater total case capacity and burns up to 4 grains more powder than the Remington cartridge. The up to 4 grains of additional powder the .300 WSM burns resulted in velocities just shy of 3,000 fps with 180-grain bullets from the 24-inch barrels of Montana Rifle Company, Remington Model 700 and Winchester Model 70 Featherweight rifles. Only Reloder 17 pushed 180s over 3,000 fps, and that was Nosler 180-grain AccuBond bullets at 3,040 fps with 65.5 grains of powder. Various handloading manuals

Table I **.300 Remington SAUM Factory Loads**

load (grains)	muzzle	yards				
		100	200	300	400	500
150 NoslerCustom AccuBond						
velocity (fps):	3,200	2,971	2,754	2,547	2,349	2,160
energy (ft-lbs):	3,410	2,940	2,526	2,160	1,838	1,554
trajectory (inches)		+1.2	0	-5.8	-17.0	-34.5
165 Remington Premier PSP Core-Lokt						
velocity (fps):	3,075	2,792	2,527	2,276	2,040	1,817
energy (ft-lbs):	3,464	2,856	2,339	1,898	1,525	1,213
trajectory (inches)		+1.4	0	-7.0	-20.7	-42.1
180 Remington Premier Core-Lokt Ultra Bonded						
velocity (fps):	2,960	2,727	2,506	2,295	2,094	1,904
energy (ft-lbs):	3,501	2,972	2,509	2,105	1,753	1,449
trajectory (inches)		+1.4	0	-7.1	-20.9	-42.6

list maximum velocities for 180-grain bullets of 40 to 100 fps in favor of the Winchester over the Remington short magnum.

All that clout is unnecessary for a lot of shooting, and the .300 SAUM showed its versatility with reduced velocity loads for practice. Light amounts of powders

such as H-4189, H-4895 and Varget shot Sierra 125-grain Pro-Hunter bullets from 2,500 to 2,700 fps with groups of an inch to 1.5 inches at 100 yards. For a mild-mannered deer load, moderate amounts of H-4350, IMR-4064 and Varget shot Hornady 150-grain SSTs about

(Continued on page 67)

Run³... gun³... and win with Tac.

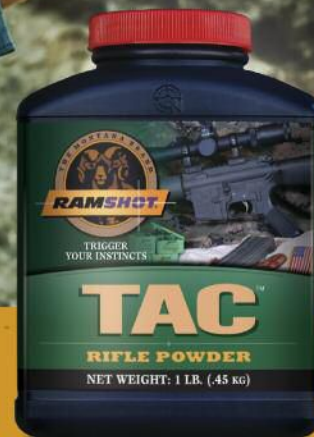
In the action-packed sport of 3-gun shooting, there is no powder that performs as consistently as Ramshot TAC. Competitive 3-gun marksman Sterling White trusts TAC to deliver extreme accuracy with every shot...

and so should you.



westernpowders.com

TAC
- another winning powder from Ramshot





WORKING ON THE RUGER 10/22

LIGHT GUNSMITHING by Gil Sengel

The title of this column is not really appropriate. The connotation of the words *working on* is that there is something about the Ruger 10/22 that needs repairing, altering or changing. Such is not the case. In fact, the 10/22 is perfect for its intended purpose, which is to provide a means to participate in that most honorable pastime of plinking.



The safety must be in the half-on, half-off position to allow the button to clear the inletting when removing the barreled action from the stock.

Difficulties arise, however, if the rifle resides in an area that requires it to be cleaned and lubricated to prevent rusting of steel parts. In drier climates, malfunctions will eventually occur due to fouling build-up, regardless of lubrication applied. Despite how good the Ruger 10/22 is, it won't run forever without some attention.

First are simple cleaning operations. This requires disassembly, which is begun by removing the magazine and checking to see that the chamber is empty. Next, loosen the takedown screw and remove the barrel band (if a carbine model). Now push the safety button to *halfway* between safe and off-safe. This allows the button to clear the stock inletting just above it as the barreled action is lifted out of the wood. Failure to

attend to this detail will put a nasty dent in the stock, and the rifle still won't come apart.

With stock and barreled action separated, push out the two pins at the lower rear of the receiver that retain the trigger guard assembly – that is, if they haven't already fallen out! Now push out the bolt stop pin at the rear of the receiver, unless it has also fallen out. If that's the case, find it and put it with the other parts. Pull back on the bolt handle until it stops. Lifting the front of the bolt away from the receiver frees the bolt handle assembly and captive spring so it can be removed through the ejection port. The breech bolt will now drop free. If it doesn't, use the ancient gunsmith disassembly secret of turning the receiver open side down and shaking vigorously. There are no loose or small parts

The pointed jag locates the spot for drilling a hole in the receiver, which is measured and moved to the outside surface.



The barrel can now be cleaned from the chamber end.

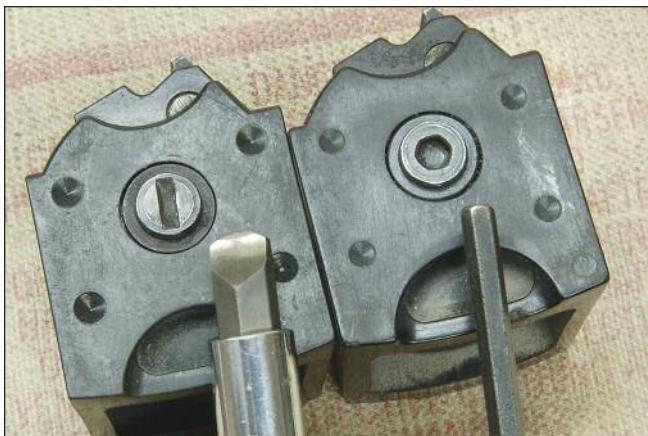


A pick from Montana X-Treme removes crud from between the bolt and extractor. Fouling also adheres to the inside of the receiver and should be removed.

to worry about; just the bolt assembly and bolt handle assembly.

These two major parts need not be broken down any further. Just soak them in mineral spirits and remove fouling with a stainless steel "toothbrush" and scraper as available from such outfits as Harbor Freight Tools. Set both assemblies aside at least overnight to allow solvent to drain out. The same applies to the inside of the aluminum receiver, but use only a soft toothbrush to prevent scarring the metal.

Removing the barrel would normally be next, but instead we are going to drill a hole in the receiver! The hole is to allow a cleaning rod



Left, two different screws are used to hold the Ruger 10/22 magazines together. Right, retaining clips made to hold the magazine throat to the end cap will be installed on the magazine (see arrow).



to pass through the rear, eliminating wear at the muzzle or a host of problems associated with continually removing and replacing the barrel in the cast receiver. Since a future column will cover barrels and barrel fitting to Ruger 10/22s, no more will be said here.

Rimfire bores measure .217 inch. Cleaning rod diameters are about .205 inch. One wrap (do not overlap) of masking tape at three or four points on the rod will make it a close fit in the bore. Attach one

of those finger-piercing pointed jags to the rod and push it down the bore from the muzzle until it contacts the rear of the receiver. A couple of layers of masking tape in this area allow the jag point to penetrate, marking the exact center of the bore. Measure and transfer this point to the outside and drill a .25-inch hole in the receiver. The barrel may now be cleaned from the rear as it should be.

Next is the rotary magazine. It works for years – until one day it

doesn't. This is usually caused by dropping it in sand or dirt. Carrying magazines in a hunting coat pocket can also affect operation. The debris that inhabits such places gets down inside and retards or prevents the rotor from turning when the magazine is loaded.

The Ruger 10/22 instruction man-

#1 in Vintage Firearm Restoration & Historical Metal Finishes Modern Firearm Manufacturing

TURNBULL MODEL 1886

Standard Features

Chambered in 45-70 or 45-90
26" Full Octagon Barrel
Turnbull's Period Correct Finishes
Walnut Stocks

Available Upgrades

Deluxe American Black Walnut Stocks
'H' Pattern Checkering
New Barrel (other than standard caliber, length)
Custom Engraving

CALL OR VISIT OUR
WEBSITE FOR PRICING!



**TURNBULL RESTORATION
& MANUFACTURING CO.**

#1 Vintage Firearm Restoration & Historical Metal Finishes
Modern Firearm Manufacturing

WWW.TURNBULLMFG.COM

(585) 657-6338

The Difference Between,



And,



Is This.



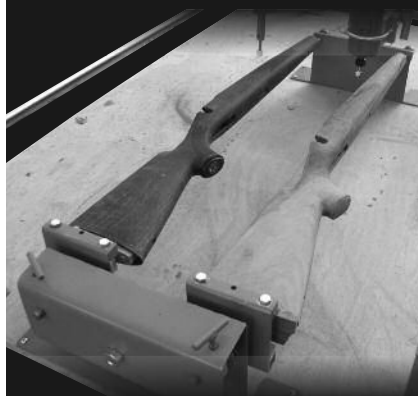
TIMNEY TRIGGERS

www.timneytriggers.com

866-484-6639

2020 W. Quail Avenue - Dept. R
Phoenix, AZ 85027

RADARCARVE® Gunstock Carving Duplicators



Thousands of Uses!

- Gunstocks • Furniture
- Decoys • Musical Instruments
- Pistol Grips • Propellers

**Incredibly
Accurate!**

Tel: 505-948-0571

www.radarcarve.net

www.RadarcarveR.com



*The home-made
disassembly screw
(top) and the factory
magazine screw
(bottom) are explained
in the text.*

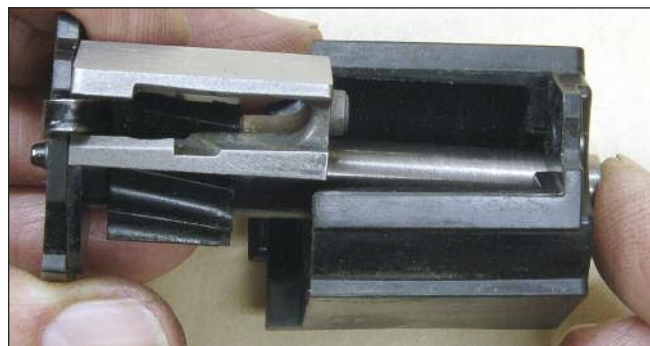
ual I have states flatly, "Do not disassemble the magazine." Also, if the magazine seems faulty, "Get a new one." Good heavens! It's just a mechanical device. There is no reason it can't be kept clean inside. Before attempting to disassemble a magazine, however, a couple of simple tools must be made.

The first item is a means to remove the screw at the front of the magazine that holds it together. Early screws had what looks like a common slot, but it isn't. It's concave with tapered sides. A common screwdriver won't work, so one must be ground to fit. This is easy enough as all gun tinkerers have screwdrivers with broken tips lying around. Current magazines use a $\frac{3}{16}$ -inch Allen wrench. A photo shows both of these.

The next piece is a small spring retaining clip. It holds the magazine throat (steel part through which cartridges feed) to the front plate of the magazine when disassembled. Made by bending a piece of .030-inch thick steel banding, it

costs nothing – just the right price! The photo shows it in profile and when in place on a magazine.

The final item must be made on a lathe, but it is simple on even the smallest of hobby-type machines. It is a copy of the magazine screw just mentioned except the head is left off and the body is extended. Dimensions? Just put a wrap of



Magazine disassembly begins by installing a retaining clip, removing the factory magazine screw and inserting a disassembly screw. Pushing on the disassembly screw separates the rotor assembly from the magazine body.

tape around the magazine above and below the screw, remove it and copy. The threaded end is 8x32 tpi.

Magazine disassembly is now simple, and the spring setting isn't dis-



When reassembling the rifle, the factory steel bolt stop pin can be replaced with one made of tough plastic, supposedly preventing damage to the aluminum receiver.

turbed. Slide the retaining clip in place. Remove the magazine screw and replace it with the disassembly screw drawn up finger-tight. Pressing on the protruding end of the screw disassembles the unit into two pieces: the magazine body and everything else. Debris falls out or can be wiped away. Reassemble in reverse order. No lubrication is needed. Be certain the two pieces are firmly pressed together and the magazine end plate is *fully* down in its recess before replacing the disassembly screw with the factory part. The design of the factory screw prevents overtightening.

When reassembling the rifle, a couple of drops of oil on the recoil spring and wiping the bolt down with an oily patch is all the lubrication required. There is, however, one final item that might be of interest.

Some years back the placing of small resilient pieces of plastic called buffers in semiautomatic handguns became popular. Their purpose was to cushion the otherwise violent metal-to-metal contact that stopped rearward movement of the slide. This same idea is now available to Ruger 10/22 owners in the form of a replacement for the steel bolt stop pin.

Advertised as preventing bolt damage, cycling noise, receiver cracking and bolt-bounce (whatever that is), they are available anywhere Ruger 10/22 accessories are sold. Some are said to be made of polyurethane, though I have long made them from .25-inch diameter black acetal rod available in some hobby shops or from suppliers like ENCO. Many owners insist the action cycles more quietly with the new pin installed, but my hearing is too bad to notice a difference. As to preventing cracked receivers, I have personally seen no such damage, but that may or may not mean anything.

These are a few of the easy things one can do to keep the Ruger 10/22 running smoothly. Next time we will look at every owner's favorite gripe, the trigger mechanism. 



**SOU'WESTER
OUTFITTING**
NEWFOUNDLAND, CANADA
Moose, Woodland Caribou & Black Bear Hunts
Book now for 2015 & 2016 • Tel/Fax: (877) 751-1681
dean.wheeler@nf.sympatico.ca www.biggamecanada.com
P.O. Box 159, York Harbour, NL, Canada A0L 1L0

BLUES BROTHERS
Firearms Metal Finishing Specialists
• Blueing: Matte, Satin and Polished
• Carbon & Stainless Steel Hot Bath
• Cerakote Coating
• Complete General Gunsmithing
Call for information.
Jess: 928-308-7732

Winchester Models 1873, '88, '92, '94 & '95
Repairs to Complete Restorations



Reline Barrels, Reblue Jobs including Hand Polishing Receiver & Octogan Barrels. Rebarrelling, Reset Headspace

NU-LINE GUNS, Inc.
8150 CR 4055, Rhineland, MO 65069
573-676-5500 • Email: nlg@ktis.net
www.nulineguns.com



**A NEWLY
CROWNED
KING.**



**INTRODUCING THE NEW
TIPPED MatchKing®**

1400 West Henry Street
Sedalia, MO 65301
Tech support: 800-223-8799
Other calls: 888-223-3006

How do you make the most accurate bullet in the world even better? By crowning the MatchKing with an acetal resin tip that lowers drag by improving the ballistic coefficient. Learn more about the six new TMK (Tipped MatchKing) bullets at sierrabullets.com.

WWW.SIERRABULLETS.COM

 © Copyright 2015 Sierra Bullets



SCOPES, MOUNTS AND STOCK FIT

A RIFLEMAN'S OPTICS by Lee J. Hoots

Today nobody talks about “cheek weld,” an integral part of shooting. Pressing the cheek bone consistently and snugly against a rifle stock’s comb was once considered a fundamental necessity. It still is with open sights, but scoped rifles are apparently a different story. Perhaps this new erroneous irrelevancy is due to the fact that during the past 15 years or so, scopes have become larger, with 50mm objective lenses commonly used on hunting rifles.

For the average hunter or shooter, mounting a large objective scope atop any rifle with a traditional stock design is putting the cart before the horse. The trouble lies not with the quality of large scopes. Some are quite good. Instead, the issue is that many (maybe most) of them are being used on rifles that aren’t properly stocked to handle a scope that must sit in “high” mounts. To see through them, we must lift our faces from the stocks. This can lead to undesirable shot placement in a variety of ways.

With the exception of “tactical” or “long-range” hunting stocks that come with combs that can be lowered or elevated as needed, stocks on most rifles are poorly suited for high scope mounting. Rifle man-



The Nightforce rail and low rings are too high for a comfortable cheek weld; all that could be seen were the scope mounts. Swapping the NX5 2.5-10x 42mm scope to a different rifle with lower rings worked better.

ufacturers simply haven’t kept up with the trend in scopes. On traditionally designed walnut or injection-molded polymer stocks, forget about using oversized scopes. Of course, those last two statements don’t take into account the fact that everyone’s face is proportioned differently, and such a setup might work for some shooters. The rest of us (maybe most of us) may not even consider

having already set ourselves up for a headache.

There is no feasible way a commercial rifle manufacturer can build enough variation into a basic product line without derailing its marketing and manufacturing efforts. Confusing consumers with too many options could be costly, so there generally are few options on a given model. But stock fit, or

This Manners EH6 stock features the highest possible comb without need for inletting for bolt removal. The scope is a Sightron Big Sky 3-9x 42mm in low Talley Lightweight rings.



The Manners EH3 stock on this Model 700 XCR II .30-06 has a high enough comb to allow seeing through a Swarovski 3-10x 42mm scope in low Talley rings while maintaining a solid cheek weld.

more importantly, the shape and height of the comb, has always been a tradeoff. The same barreled action is usually used for rifles with open sights and for scopes, so manufacturers try to find a middle ground, a compromise, which, unfortunately, doesn’t always work well.

Then there are variations in scope mounts. “Medium” rings from one



Ruger's Hawkeye (top, with a Leupold VX2 3-9x 40mm in Ruger's lowest rings) has little drop at the comb, but it drops increasingly toward the butt, an example of a "compromise" stock that might also be used for open sights. The Kimber Classic Select (bottom, with a VX3 2.5-8x 36mm on Kimber bases and Leupold low rings) has a .43-inch comb drop that runs parallel to the bore. It was designed for use with low-mounted scopes.

manufacturer may be taller or shorter than medium rings from another. The same is true of bases. Neither is cheap, but a little experimentation sometimes solves the problem if a scope is too high or low. A recent example occurred with a Nightforce NXS 2.5-10x 42mm scope supplied with the company's high-end Picatinny rail and rings for a Winchester Model 70 Sporter .264 Winchester Magnum. With the lowest rings, the scope sat much too high, resulting in no cheek weld, so the idea was scrapped, even though the rifle's comb is listed as having a 1/2-inch drop (not much) and remains parallel along its length. Switching the scope to a Model 700 XCR II .257 Weatherby Magnum in a McMillan 700 Classic stock (1 1/16-inch drop at the comb) actually worked better, but only with low Talley Lightweight rings installed. Different rings might have worked on the Winchester but weren't handy.

Some gun shops actually only carry medium rings because they work for most scope objectives in the common 40mm or 42mm range. They are also likely to carry high rings, because they sell 50mm scopes. "Low" rings often need to be specially ordered. Stocking multiple ring heights takes up retail space that can be used for

items that are more profitable or in demand. This is similar to why rifle companies compromise on stock designs. If someone wants a Model 70 Sporter, it's available with a 1/2-inch drop at the comb, period. If it fits comfortably and accommodating scope mounts are hanging on the store wall, perfect. If you find your face being pulled off the stock to see through the scope, look for lower rings that allow a scope to be mounted closer to the receiver.

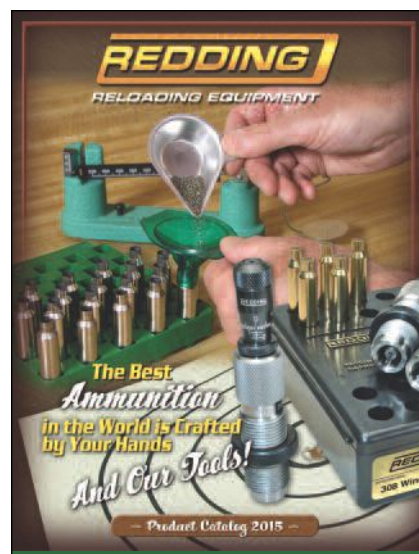
After-market stocks with adjustable combs are a more costly option, but they often weigh more, don't have the look and feel of walnut, and most hunters aren't interested in adding weight to a favorite rifle unless building a 10-pound, long-range rig. Manners Composite Stocks (www.mannersstocks.com), however, has recognized a need for lightweight hunting stocks for Model 700 rifles, with more options to come. The Elite Hunter (EH) weighs less than 2 pounds and can be had with different comb heights. Last summer a .30-06 in an EH3 stock (.40-inch drop as listed) worked quite well in South Africa. The comb is high enough that it requires a shallow notch at its nose so the bolt can be removed. The EH6 is a trimmer stock with a narrower forend and weighs a hair less. Both allow a firm cheek weld with scopes up to

about 42mm objective diameter mounted in low rings. Manners also has stocks with taller combs for use with larger objective lenses, including adjustable combs.

There are other issues that can arise when a scope sits too tall on a rifle. Obviously it weighs more and can throw off the balance of a hunting rifle, especially lightweights; building a flyweight rifle, then adding 1 1/2 pounds of weight in scope and mounts, makes little sense. Secondly, lifting one's head from the stock to see through the scope also invites parallax problems. If there is no cheek support, it's easy to slightly lean your head one way or the other.

Parallax is an optical annoyance, explained here by Reinhard Seipp, optical engineer and Meopta USA general manager: "Parallax is the apparent movement of objects within the field of view in relation to the reticle. Riflescopes have an objective, ocular and erector sys-

(Continued on page 65)



Redding delivers more selection in its die sets for 2015 highlighted by the New Premium Die sets featuring Carbide Size Buttons and Micrometer Seating Stems. Additional calibers have been added to the National Match Die Sets as have Carbide Size Buttons. In the handgun product-line, three new categories of die sets now feature Dual Ring Carbide Sizing dies and Micrometer Adjustable Profile Crimp Dies are available for the first time. Dies are also offered for the 26 Nosler and the new 28 Nosler in all configurations from Standard to Competition Sets.

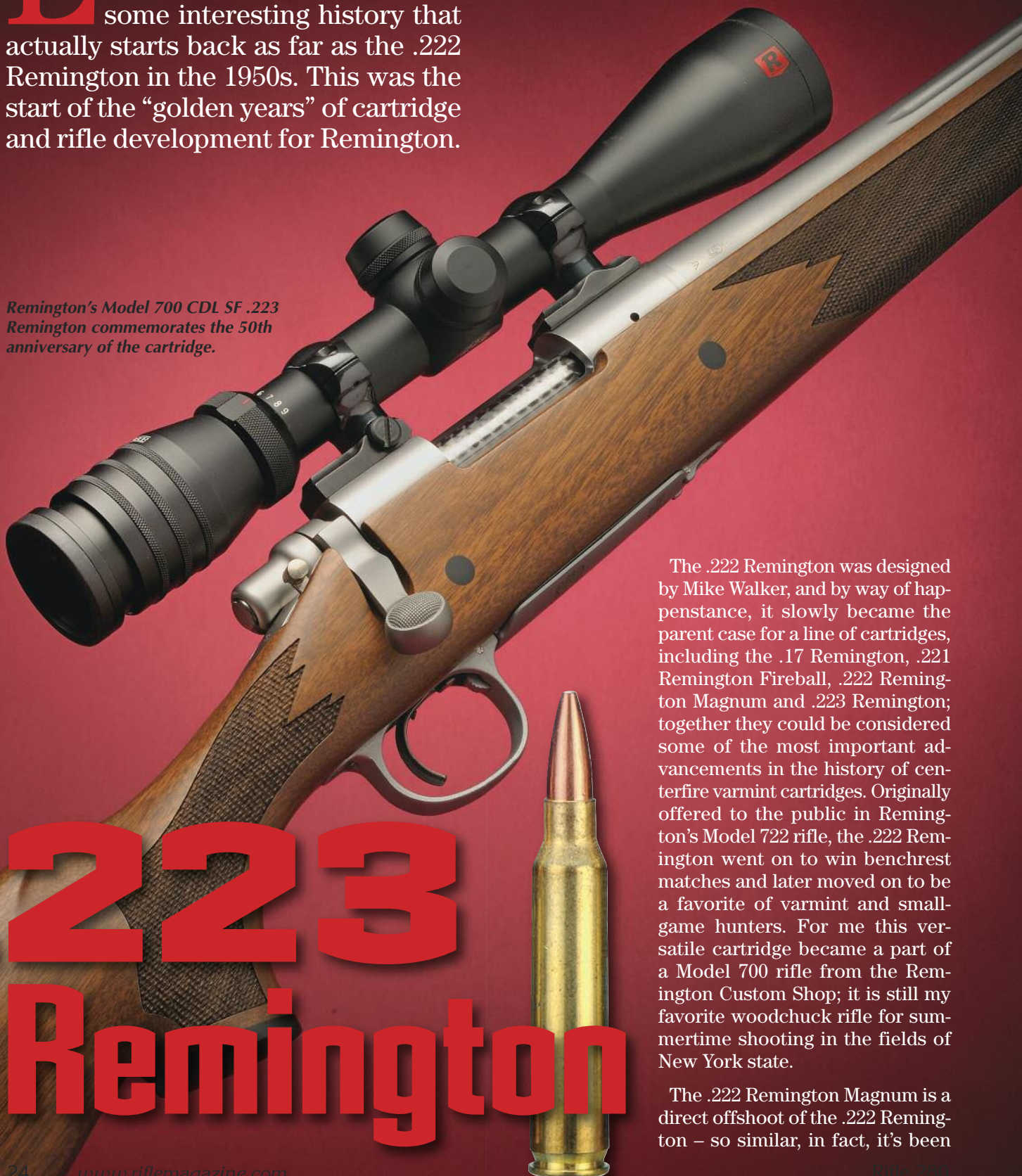
For up-to-the-minute Redding information and helpful technical tips, visit our website at www.redding-reloading.com

Stan Trzoniec

Like all military cartridges that found civilian success, the .223 Remington is not without some interesting history that actually starts back as far as the .222 Remington in the 1950s. This was the start of the “golden years” of cartridge and rifle development for Remington.

Remington's Model 700 CDL SF .223 Remington commemorates the 50th anniversary of the cartridge.

Celebrating 50+ Years As a Varmint Cartridge



The .222 Remington was designed by Mike Walker, and by way of happenstance, it slowly became the parent case for a line of cartridges, including the .17 Remington, .221 Remington Fireball, .222 Remington Magnum and .223 Remington; together they could be considered some of the most important advancements in the history of centerfire varmint cartridges. Originally offered to the public in Remington's Model 722 rifle, the .222 Remington went on to win benchrest matches and later moved on to be a favorite of varmint and small-game hunters. For me this versatile cartridge became a part of a Model 700 rifle from the Remington Custom Shop; it is still my favorite woodchuck rifle for summertime shooting in the fields of New York state.

The .222 Remington Magnum is a direct offshoot of the .222 Remington – so similar, in fact, it's been

.223 Remington

called the “long” .222 Remington. Shoulder angle and head dimensions are the same for both, but overall length is a bit longer (0.15 inch) for the magnum, which in water capacity amounts to about 11 percent more volume (28.6 verses 31.8). Using the same powder and bullet weight, with all things being equal, expect about 100 fps more muzzle velocity with the magnum.

While the popularity of the .222 Remington Magnum has declined quite a bit over the years, I have both a Model 700 BDL and a custom T/C Encore that get regular use in the field only because they seem to be a rarity to most small-game hunters. I have a good stash of new brass purchased from a dealer that really wanted to get rid of it for obvious reasons, and handloading this cartridge does bring it up to its full potential. Using H-4895 powder and 45- to 50-grain bullets, velocities can be around 3,550 fps with groups circling under an inch.

The .222 Magnum was initially developed as a military cartridge hopeful in a joint effort between the Springfield Arsenal and Remington Arms for a new, small-caliber, high-velocity rifle. It was clear the .222 Remington did not have enough powder capacity to suit the military’s penetration and velocity requirements. One of the major players, ArmaLite then contacted Remington to design something similar but with a longer case body and a shorter neck, which it called the .222 Remington Special. Earle Harvey at the Springfield Armory was also working with Remington on yet another version, the .224 Springfield.

In a rather unconventional twist, Springfield dropped out of the trials, with the .224 Springfield becoming the commercial version of the present-day .222 Remington Magnum, which later became the .223 Remington, albeit a bit shorter. Winchester also got into the fray

with the .224E1 Winchester, reworked the case dimensions again and came up with the .224E2 Winchester. The armed forces standardized on the AR-15 as the M16 rifle with the now-accepted .223 Remington being called the 5.56x45mm, allowing the .223 Remington to be commercialized in 1964 as a highly touted varmint cartridge. The Remington Service Rifle cartridge (5.56x45mm, aka .556 NATO) is the same cartridge but is loaded with heavier bullets and is made to be used in rifles with one-in-9-inch twist barrels and with a slightly longer throat.



The floorplate is tastefully etched denoting the 50th anniversary of the .223 Remington.

Interestingly, after all this Remington did not introduce a rifle for the .223 Remington until 1967, a short action fitted to the Varmint Special complete with a heavy barrel and Remington 40XB target-style scope bases. The walnut stock included pressed-in fleur-de-lis checkering, a black forend tip and a Monte Carlo profile and cheekpiece. That year only 470

rifles were sold. That number remained steady until 1972. In fact, in 1967 the Remington catalog showcased this varmint rig with two full pages of photographs and specifications for multiple cartridges to include the .222, .223, .22-250 and 6mm Remingtons and the .243 Winchester. Because Remington had visions of hunters using the .223 Remington as a medium-to big-game rifle, the BDL version was introduced in 1983.

Although the velocity gap between the .222, .223 and .222 Remington Magnum is small, the .223 Remington still ranks as the most popular among the top 10 cartridges produced by Remington. The .243 Winchester is sixth in a line of varmint cartridges with the .22-250 Remington listed as number eight. The .222 or the .222 Remington Magnum are not even on the list, and the .222 Remington Magnum is discontinued.

The .223 Remington affords handloaders a more than ample supply of brass, and with its nominal case capacity, a pound of powder goes a long way. For example, using a 52-grain bullet over 21.0 grains of IMR-4198, that equates to about 334 loads per one-pound canister of propellant. The cartridge offers hundreds of bullet, powder and primer combinations. With a 40-grain bullet, for example, velocities come close to 3,800 fps. The 45- to 50-grain bullets drop a little velocity.

I prefer 52- to 55-grain bullets for small game. They seem to balance out the cartridge, and hardly a bullet combination will go over a minute of angle regardless of the rifle. Sixty-grain bullets start to drop velocity, which means more holdover at longer distances, especially around 250 to 300 yards.

Nearly every ammunition manufacturer, including Black Hills, Federal, Hornady, MidwayUSA, Norma, Nosler, Remington and Winchester, offers .223. Add in the variety

.223 Remington

of bullet weights (over 60 alone from Black Hills from 36 to 77 grains), the choices become even more broad. It's hard not to pick a commercial loading that will shoot well. For example, in a Savage Model 25 using factory ammunition, Hornady's 55-grain V-MAX placed three shots into $\frac{3}{4}$ -inch groups consistently; Remington's 55-grain hollowpoint produced $\frac{7}{8}$ -inch groups and its 60-grain hollowpoint Match grouped an even $\frac{1}{2}$ inch.

Most rifle companies offer a .223 Remington, from economy models to custom rifles. The list goes on, and last year, in order to celebrate 50 years of the .223 Remington, Remington introduced a special Model 700 CDL SF Limited Edition rifle.

The Model 700 became available two years before the introduction of the .223 Remington cartridge. A press release dated January 1962 read in part, "The World's Strongest Bolt Action Center Fire Rifles" were ready for shipment to distributors, and "the new Remington Model 700 is the most sensational bolt action centerfire rifle ever offered to the American Sportsman." The new rifles were



Left, the safety lever is located right next to the bolt shroud. Above, a stock reinforcing bolt is covered by a black plug, and a gas vent is located in the front receiver bridge.

available in two models, ADL and BDL, in 11 calibers from the .222 Remington to .458 Winchester Magnum. For under \$140, the BDL came with all the trimmings, but you had to ante up a bit more for the African calibers (\$310.00). Today, the Model 700 has been chambered in over 50 different cartridges with an estimated 5 million guns sold.

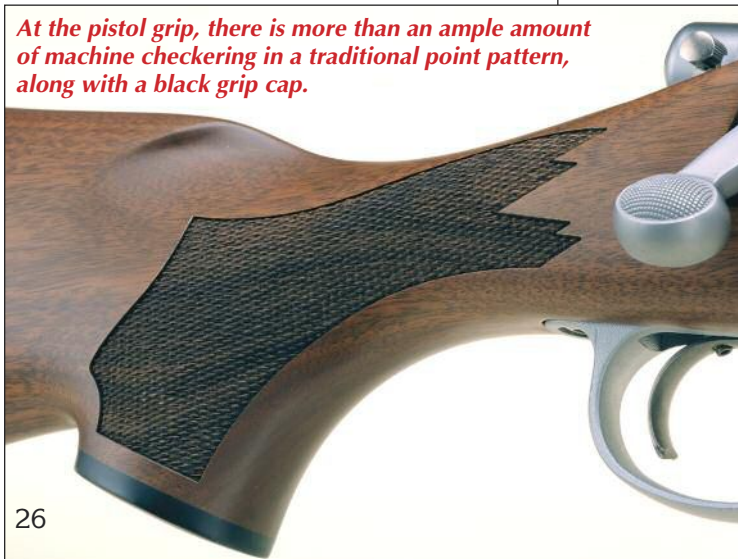
The anniversary .223 Remington 700, introduced in 2014, is decked out in an American walnut stock,

the finish of which is reminiscent of the older oil finish but with a satin patina, which is smooth to the touch without any blemishes. The wood itself looks to be in the select grade with straight grain and no pin knots, and it is cut on an angle to place the grain in an upward direction on the forearm toward the black forend tip. Keeping with the classic design, there are no white spacers (as would be the case on the BDL), and to complement the stock, a black pistol-grip cap is located on the base of the grip.



There is no Monte Carlo hump on the comb.

At the pistol grip, there is more than an ample amount of machine checkering in a traditional point pattern, along with a black grip cap.



Remington Model 700 CDL .223 Remington

load (grains)	velocity (fps)	group (inches)
40 Hornady Varmint Express	3,599	1.25
55 Remington Hollow Point Power-Lokt	3,227	1.00
60 Remington Hollow Point Match	3,051	.75

Notes: All three-shot groups fired at 100 yards and clocked over an Oehler Model 35P chronograph.



A black forend tip has been installed at a 90-degree angle to the stock.

The stock tapers to the rear from the forend tip and just behind the tip there is more than an ample supply of cut checkering. Cut in a traditional point pattern, close examination shows the diamonds are sharp, well-formed and without run overs. There are twin stock reinforcement pins under the receiver covered with black fillers. Surrounding the bottom metal, the stock widens, giving more than enough support for both the receiver, magazine, floor-

plate and trigger guard assembly. A flared checkering pattern decorates both sides of the pistol grip, allowing a comfortable position to hold the rifle. A subdued cheek-piece is included on the stock and seems to be a good compromise

The rifle features a stainless steel, fluted barrel 24 inches in length. Considered a sporting weight, at the muzzle it measures .650 inch complete with a recessed crown. The barrel and receiver are treated with a process Remington calls the Trinyte Corrosion Control System, essentially a mixture of electroless nickel and

Specifications

Model: Remington CDL SF Special Edition
Action: Model 700, bolt-action rifle
Stock: American walnut
Cartridge: .223 Remington
Barrel length: 24 inches
Overall length: 42½ inches
Sights: none furnished, receiver drilled and tapped
Weight: 7½ pounds, sans ammo, scope or bases
Finish: satin finish on metal and wood
Options: none
Price: \$1,226.00
Manufacturer: Remington Arms
 Ilion, New York
www.remington.com

a proprietary PVD, which is a multilayer coating to protect against rust and abrasion, yet it's only a fraction of a human hair in thickness. For the all-weather, all-season hunter, this seems to be a great feature.

The receiver on the Model 700 has always been of machined tu-

COPPER is great for bullets, but not for barrels.

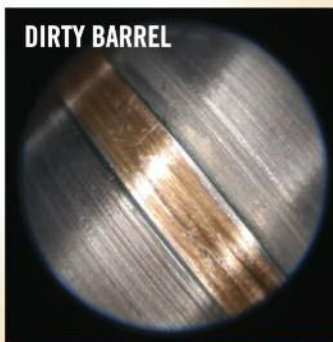


Copper buildup in your barrel affects accuracy. And removing stubborn copper deposits is easy with Montana X-Treme's COPPER KILLER. This industrial-strength

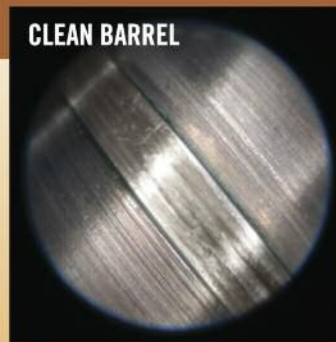
solvent quickly tackles the toughest jobs and is completely barrel safe.

Professional shooters around the world trust COPPER KILLER to clean their barrels...

and so should you.



DIRTY BARREL



CLEAN BARREL



westernpowders.com

Copper Killer - another high performance product from Western Powders

.223 Remington



Remington's X-Mark Pro trigger is user-adjustable via an Allen screw. The trigger is crisp to use and its face is polished smoothly.

bular design. All receivers are drilled and tapped for commercial scope mounts. For my sample, I used Redfield bases, rings and the new Redfield Revenge Hunter with a 3-9x zoom range. Redfield has made a strong comeback in the industry; now a part of Leu-



The receiver is machined from tubular stock. Note the hefty recoil lug and the smooth finish of the receiver.



A variety of handloading components make the .223 Remington popular.

pold, it offers not only scopes but also spotting scopes, binoculars and dot sights.

The bolt is typical Model 700. Up front, there are twin lugs for a secure lockup, and within the bolt face is the extractor and ejector. The bolt keeps its .695-inch diameter from behind the lugs to the front surface of the bolt handle. It is jeweled for appearance and operates smoothly and without hesitation. The bolt handle is swept back for ease of operation and is checkered on both sides.

Upon cocking the bolt, the firing pin protrudes outward from the shroud as a visual indicator. The X-Mark Pro Adjustable trigger is standard. User adjustable, Remington states that it "breaks like glass," and it certainly does. From the factory, mine was set for 4½ pounds, and for bench testing, this is a good average. Later in the field, I would reduce it a bit, but the interesting thing about this trigger is that there is absolutely no slack or take up, nor was there any creep as the sear moved over

GAMALIEL

SHOOTING SUPPLY

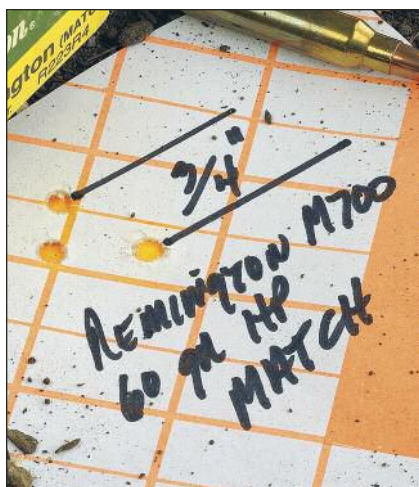
SUPPORTING SHOOTING FOR OVER 40 YEARS!

FREE SHIPPING ON QUALIFYING ORDERS OVER \$50!

GO ONLINE & REQUEST A FREE CATALOG!



Gamaliel Shooting Supply
Gamaliel, KY - 1-800-356-6230
www.gamaliel.com



The Remington 60-grain Match offering placed three shots under an inch.

the machined parts within the trigger assembly.

The floorplate is metal, and the anniversary of the .223 Remington is tastefully etched. The trigger guard incorporates the floorplate release. To the front of the trigger shoe, the bolt release is located out of the way but handy when you need to remove the bolt for travel or maintenance. The safety lever is mounted on the right side of the receiver and is the two-position variety. When the safety is on "safe," the bolt still operates to remove or add ammunition, if desired.

On the range, the rifle performed well. Using a variety of .223 ammunition, the Hornady 40-grain Varmint Express averaged 1.25-inch groups. Remington's 55-grain Hollow Point Power-Lokt printed one-inch groups, while its 60-grain Hollow Point Match ammunition did the best with groups consistently under an inch. For wood-chuck forays, aside from my trusted handloads, I would still opt for the 55-grain factory offerings for long-range shooting with a minimum holdover.

The .223 Remington is a great varmint and small-game cartridge that is up to the expectations of hunters. The military has helped with an excess of brass, and knowledgeable sportsmen have put it to good use for a variety of game. R

From the BLACK POWDER ERA
through WWII



We have the reloading supplies you need to get those old guns shooting, including a large selection of brass, dies and bullets, some of which can't be found anywhere else!

208-263-6953

8:00 a.m. - 4:30 p.m. PST
Monday thru Friday

www.buffaloarms.com



**High Plains
Reboring & Barrels, L.L.C.**

**Offering Button and
Cut-Rifled Barrels.**

- Most calibers and twist rates
- Some AR-15 barrels available

Contact: Norman Johnson

nrjonsn@westriv.com

Phone: 701-448-9188

243 14th Avenue NW

Turtle Lake, ND 58575

**Are you a custom gunsmith?
Ever tried bone char for casehardening
or barrel bluing?
2 sizes of bone char available.**

Now available in 4 lb. pails.



Ebonex CORPORATION

P.O. BOX 3247 - MELVINDALE, MI 48122

(313) 388-0060

ebonex@flash.net

WWW.EBONEX.COM

Rifles with Confidence Built in



HILL COUNTRY RIFLES

www.hillcountryrifles.com • 830-609-3139

*Scopes and mounts sold separately. These rifles are guaranteed to shoot 3-shot, 1/2" groups at 100 yards, with factory ammo.

We are a small company of craftsmen devoted to building excellent rifles and delivering exceptional customer service since 1996. As part of our Accurizing system, each rifle is individually aluminum pillar and glass bedded. We do not rely on generic bedding blocks. Every one of our rifles is fully tested for proper and reliable function. Every Hill Country Rifle is shot in our 100 yard underground range to verify accuracy and our accuracy is guaranteed with factory ammunition. We pride ourselves on perfect fit and finish in every respect. We are not just selling you a rifle. We are selling you what you can do with our rifles. That is how we deliver "Rifles with Confidence Built in."

**For custom 1911's please see our new division,
Hill Country Classics, at www.hillcountryclassichandguns.com.**

.28 Nosler

Shooting a New 7mm Magnum

Brian Pearce

The Nosler Model 48 first appeared in 2005 as Nosler's first entry into the sporting rifle market. During the 1940s, John Nosler began experimenting with premium hunting bullets, which ultimately led to the development and production of the Nosler Partition bullet in 1948 and explains why this rifle is appropriately known as the Model 48. By producing its own rifle and hunting ammunition, Nosler was positioned to develop new cartridges. Examples include the .280 Ackley Improved and .26 Nosler. A new cartridge for 2015 is the .28 Nosler that features a beltless case, power, high velocity and a flat trajectory.



The Model 48 has earned a reputation for quality and accuracy. The flagship rifle is the NoslerCustom in a fancy-grade checkered walnut stock, and it is guaranteed to give .5-inch or less groups at 100 yards with prescribed ammunition. Retail is \$4,495. Although there are many variants, including the Long Range, Expedition, Brush Country, etc., the Patriot, Outfitter and Heritage models are production rifles and retail between \$1,795 and \$1,895.

All metal is coated with CERAKOTE, which helps reduce friction on working parts, is largely scratch resistant and helps prevent rust. Nosler bead blasts the metal before the CERAKOTE is applied, which is then baked on and results in a nonglare matte finish.

The Nosler Model 48 action is a push-feed system with typical countersunk bolt face, plunger ejector and rotating extractor that measures 1.300 inches in length and is staked to the bolt body. It resembles the AR-15/M16 pattern extractor. The bolt features twin locking lugs and results in a 90-degree lift. The bolt body is fluted to reduce friction and is generously vented to divert gases down into the magazine and away from the shooter in the unlikely event of a ruptured case. The bolt sleeve cap likewise offers protection from gases. The firing pin is a one-piece design and is easily removed for cleaning without tools. The bolt stop is constructed of a minimum of materials but is nonetheless strong. The bolt handle is gracefully swept back, while the knob is knurled.

The receiver is flattened on each side just below the round top, giving it a unique look, but also serves to reduce weight. The action is secured to the stock via two guard screws with Torx heads, and the floorplate is hinged. The trigger guard and floorplate are constructed of alloy, at least on the Patriot model used herein.

Model 48 variants are offered with two- and three-position safeties, with the Patriot model having the two-position type that allows the bolt to be opened when it is in the ON position. Trigger options include Timney for a three-position safety and Rifle Basix for a two-position safety (standard on the Patriot). Either is fully ad-



Left to right: .28 Nosler, 7mm Remington Magnum, 7mm Weatherby Magnum, 7mm STW and 7mm Remington Ultra Mag.

justable and offers a crisp let-off that is factory set at around 3 pounds.

The stock is constructed of a blend of Kevlar and other synthetic materials that provide lightweight construction and strength. It is a classic design with a cheekpiece and is fitted with a black, one-inch Pachmayr Decelerator pad. The base color is gray with a dash of green and is painted with a black speckling overlay. The stock is fitted with aluminum pillars, but the receiver and stock are also carefully bedded using MarineTex. The barrel free floats in the forearm channel and is stainless steel, button rifled and hand-lapped.

To evaluate the Model 48 Patriot, a Leupold VX-6 2-12x 42mm CDS-ZL scope (30mm main tube) was installed using Leupold QR bases and rings. It offers 6x optical zoom with a twin bias erector system constructed of beryllium copper alloy leaf springs that are lightweight and shock-resistant. The 2-12x power combination allows it to be at home when hunting in the brush and timber or in open country. In addition to being illuminated, it features ¼-MOA finger click adjustments, fast-focus eyepiece and is argon/krypton gas-filled to provide waterproofing. It also features Leupold's Xtended Twilight coatings to optimize light transmission that is coordinated specifically to match the human eye, and the ion-assisted coating offers a tough, scratch-resistant finish.

Open-country hunters will appreciate the Leupold Custom Dial System (CDS) that compensates for bullet drop. It was given a thorough workout on a 500-

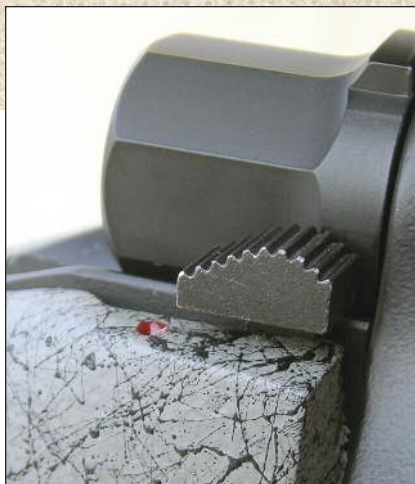
.28 Nosler

yard range, and it worked precisely. As a free service, contact Leupold with the ballistics of your cartridge and load, (bullet, BC, velocity, average elevation, temperature, etc.), and the company will send a customized dial to match. The dial is available with a one-turn zero stop or two-turn without the zero stop.

The .28 Nosler is based on the .26 Nosler case necked to accept 7mm or .284-inch bullets. It is based loosely on the beltless .404 Jeffery case or the more familiar Remington Ultra Mag with the shoulder set back to reduce case capacity when compared to the 7mm Remington Ultra Mag.

By moving the shoulder back, reducing capacity and changing

Below, the classic-styled stock on the Model 48 Patriot features a cheekpiece. Right, it also features an alloy, hinged floorplate.



Above, the Nosler Model 48 Patriot features a two-position safety. Right, the Rifle Basix trigger is fully adjustable for pull and after-travel.

RUM – or any other commercially available 7mm cartridge, for that matter. Although a number of NoslerCustom factory loads are expected to begin appearing by early spring 2015, initially the .28



advertised velocities by around 100 fps and are well below SAAMI maximum average pressure limits (65,000 psi).



the shoulder angle to 35 degrees, Nosler claims to increase efficiency. Advertised velocities for the .28 Nosler exceed the 7mm

is advertised to push a 160-grain AccuBond Long Range bullet 3,300 fps or a 175-grain AB LR 3,125 fps. These figures exceed 7mm RUM

Maximum overall loaded length for the .28 Nosler is 3.340 inches, the same as the .30-06, so it can be housed in standard length actions rather than the .375 H&H “magnum” length required for the 7mm RUM and 7mm STW cartridges.

The only factory load available at press time was the NoslerCustom 175-grain AccuBond Long Range, which was effectively prototype ammunition. In checking velocity, five shots averaged 3,209 fps (84 fps faster than advertised) and had an extreme velocity spread of 38 fps.

BLACK HILLS
LONG RANGE RIFLE
SHOOTING SCHOOL



Lee Ahrlin
Cell Phone: 605-390-1090
531 Fox Run Dr. • Rapid City, SD 57701
blackhillslongrangerifleshootingschool.com

- Two-Day Range Instruction
- 1000 yd. and 1250 yd. Shooting Ranges
- .223, .308 and .300 caliber rifles provided
- Increase Shooting Distance to 600-800 yds. and Beyond



The twin-lug bolt head features a rotating extractor, plunger ejector and countersunk face.

Nosler guarantees each Model 48 Patriot to produce a .75-inch group or less using its premium ammunition. From a sandbag rest, four, three-shot groups averaged .68 inch.

Before discussing specific handload data, the folks at Nosler indicated its factory loads are well below industry maximum average pressure limits that are established



A variety of bullets and powders was used to develop .28 Nosler handload data.

at 65,000 psi. With the right powder and bullet combinations, it is possible to exceed factory load performance.

To begin developing handload data, a sized case was checked for water capacity, which was 101.6 grains when filled level with the case mouth. With this much case volume, combined with .28 caliber, powders with a burn rate

that fall roughly between Alliant Reloder 22 through Hodgdon US 869 will probably give the best overall performance. Although a complete handloading feature article will eventually be published in *Handloader* magazine, for the purposes of this article, four powders were selected: IMR-7828, Ramshot Magnum, Alliant Reloder 25 and Hodgdon Retumbo. To as-

NEW AND EXPANDED
WESTERN POWDERS
RELOADING
& **LOAD DATA GUIDE**
EDITION 5.0

NEW DATA

The complete step-by-step guide to safely and accurately reloading ammunition for rifles and handguns.

Includes the most current Load Data Specifications for:

- RAMSHOT** RELOADING POWDERS
- Accurate** RELOADING POWDERS

Special Muzzleloading Feature and Load Data for Blackhorn 209!

TRUSTED FOR ACCURACY

Western Powders' Reloading Guide is the perfect resource for reloading enthusiasts of every level. This new Guide provides helpful information and tips on:

- Reloading Basics
- General Gun Cleaning

In addition, the Western Powders Reloading Guide includes 59 pages of the most current Load Data for:

- Accurate Powders
- Ramshot Powders
- Blackhorn 209 Muzzleloading Propellant

Get yours today!

Download complete PDF version online for free at: →

Purchase online for shipping and handling fee of \$2.99 at: →

westernpowders.com

PRECISION CUSTOM RIFLES

- Over 50 years combined small arms experience.
- Precision Action Trueing: Rem 700, Win 70, Savage, Howa, most bolt actions.
- Precision re-barreling.
- Complete custom rifles: hunting, benchrest, tactical. Call for options and/or quote.
- Certified Cerakote applicator.
- NFA gunsmithing.



LRK Mechanical, LLC
928-776-6483 • www.lrkmechanical.com

JON TRAMMEL'S GUNSMITHING



**Old World Craftsmanship
21st Century Technology**

Action Blueprinting ± .0003 • Factory Rifle Accurizing
Fluid Flushed Precision Chambering • Pillar Bedding
Trigger Jobs • Muzzle Brakes • Carbon Fiber Barrels
Custom Rifles Built • Tactical • Bench Rest • Hunting
Suppressor Sales & Installation
6.5 284 • 6.5x47 Lapua • 6.5x55 GWI • 7RSAUM
270 WSM • 6 Creedmoor • 338 Lapua Rogue
280 Ackley 30 BR • 6mm Dasher

Jon Trammel • 120 W. Walker • Breckenridge, TX 76424
Tel: (254) 559-3455 • E-Mail: trammel@texasisp.com

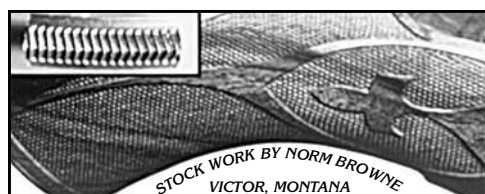
Tipton
Gun Cleaning Supplies

MAXFORCE
CLEANING ROD

1st
Sliding
Handle
Cleaning
Rod!

**NO MORE BENT OR
BROKEN RODS**

www.tiptoncleaning.com



.28 Nosler

.28 Nosler Handloading Data

bullet (grains)	powder	charge (grains)	overall loaded length (inches)	velocity (fps)
140 Barnes TTSX BT	IMR-7828	83.0	3.283	3,417
		84.0		3,449
		85.0		3,504
		86.0		3,577
		87.0**		3,626*
160 Sierra spitzer BT	Magnum	83.0	3.335	3,153
		84.0		3,182
		85.0		3,222
		86.0		3,249
		87.0		3,288
162 Hornady A-MAX	RL-25	88.0	3.340	3,313*
		82.0		3,197
		83.0		3,235
		84.0		3,280*
		85.0		3,324
168 Berger VLD	Retumbo	86.0	3.340	3,373
		83.0		3,187
		84.0		3,228*
		85.0		3,277
		86.0		3,317
168 Nosler AccuBond LR	Retumbo	83.0	3.340	3,169
		84.0		3,205
		85.0		3,255
		86.0		3,289*
175 Nosler Partition	Retumbo	80.0	3.325	3,096
		81.0		3,113
		82.0		3,143
		83.0		3,165
		84.0		3,182*
175 Nosler AccuBond LR factory				3,209

* most accurate powder charge for that bullet

** maximum

Notes: A Nosler Model 48 Patriot with a 26-inch barrel was used to test-fire the above loads. Nosler-Custom cases and Federal 215 Match (large rifle magnum) primers were used throughout. Bullet diameter: .284 inch; maximum OAL: 3.340 inches; maximum case length: 2.590 inches; trim-to length: 2.570 inches.

Be Alert – Publisher cannot accept responsibility for errors in published load data.

semble ammunition, a set of Redding Deluxe dies was ordered that included both neck and full-length sizer dies.

There is a huge selection of 7mm/.284-inch hunting and match bullets that typically weigh be-

tween 100 and 180 grains, but 140-through 175-grain weights will probably prove most popular and useful in this cartridge.

Using the Barnes 140-grain Tipped TSX pushed with 87.0 grains of IMR-7828, velocity reached over 3,600 fps and groups hovered between .75 and 1.00 inch. Moving up to the Sierra 160-grain spitzer boat-tail, 86.0 grains of Ramshot Magnum reached around 3,250 fps, and groups hovered around one inch. Changing the bullet seating depth (COAL) to 3.335 inches



This tight group was fired with handloads containing Nosler 168-grain AccuBond LR bullets and Hodgdon Retumbo powder.

and increasing the powder charge to 88.0 grains jumped velocity to over 3,300 fps, and three shots clustered just under .70 inch.

The Hornady 162-grain A-MAX gave remarkable accuracy when pushed 3,280 fps using 84.0 grains of Alliant RL-25 (with maximum velocities reaching 3,373 fps with 86.0 grains). With three shots in a single hole, the best group easily measured under .5 inch and was the most accurate load recorded from this rifle.

Both the Berger 168-grain VLD and Nosler AccuBond LR reached around 3,300 fps using 86.0 grains of Hodgdon Retumbo. Both bullets have unusually high ballistic coefficients and produced excellent long-range accuracy. The Nosler 175-grain Partition reached 3,182 fps using 84.0 grains of Retumbo and stayed under one inch.

It is suggested to use a large rifle magnum primer, with the Federal 215 Match selected to develop all accompanying handload data. To achieve uniform ballistic performance, the powder charges listed as "start" loads should not be reduced.

In developing handloads and working with factory ammunition, the .28 Nosler performance exceeded that of any other regularly available commercial 7mm cartridge. The .28 Nosler is modern in every respect; it is beltless, accurate, fast and fits in a standard .30-06 length action.

WALNUT GUN STOCK BLANKS

From Tree to Sawmill to You - No Middleman

FREE Brochure • Visit our Web site:

clarowalnutgunstocks.com

CLARO WALNUT GUNSTOCK CO.

1235 Stanley Ave. • Chico, CA 95928

Phone: (530) 342-5188 • Fax: (530) 342-5199

- Since 1949 -

**Getting a stomach-full of
Conetrol mount imitators?
How about the real thing!**

Call: 800-CONETROL
for Free Brochure
www.conetrol.com

Erhardt Custom Guns

4508 N. Montana Ave.
Helena, MT 59602



*Specializing in Modern
Classic & European Style
Custom Rifles & Shotguns.*

(406) 442-4533

ACHIEVE
the utmost
ACCURACY
from your
handloaded
ammunition

*Instant Indicator
"The Reloader's Comparator"*

This instrument provides
an extremely quick & simple
method for comparing bullets,
seating depths, fired cases,
sized cases, trim lengths
and loaded ammunition
for uniformity

*Uniformity is the key to producing
your most accurate handloads!*

*Check out this instrument's
other amazing features
on our website, or call!*

REDDING
RELOADING EQUIPMENT

1089 Starr Road, Cortland, NY 13045 • (607) 753-3331 • www.redding-reloading.com



John Barsness

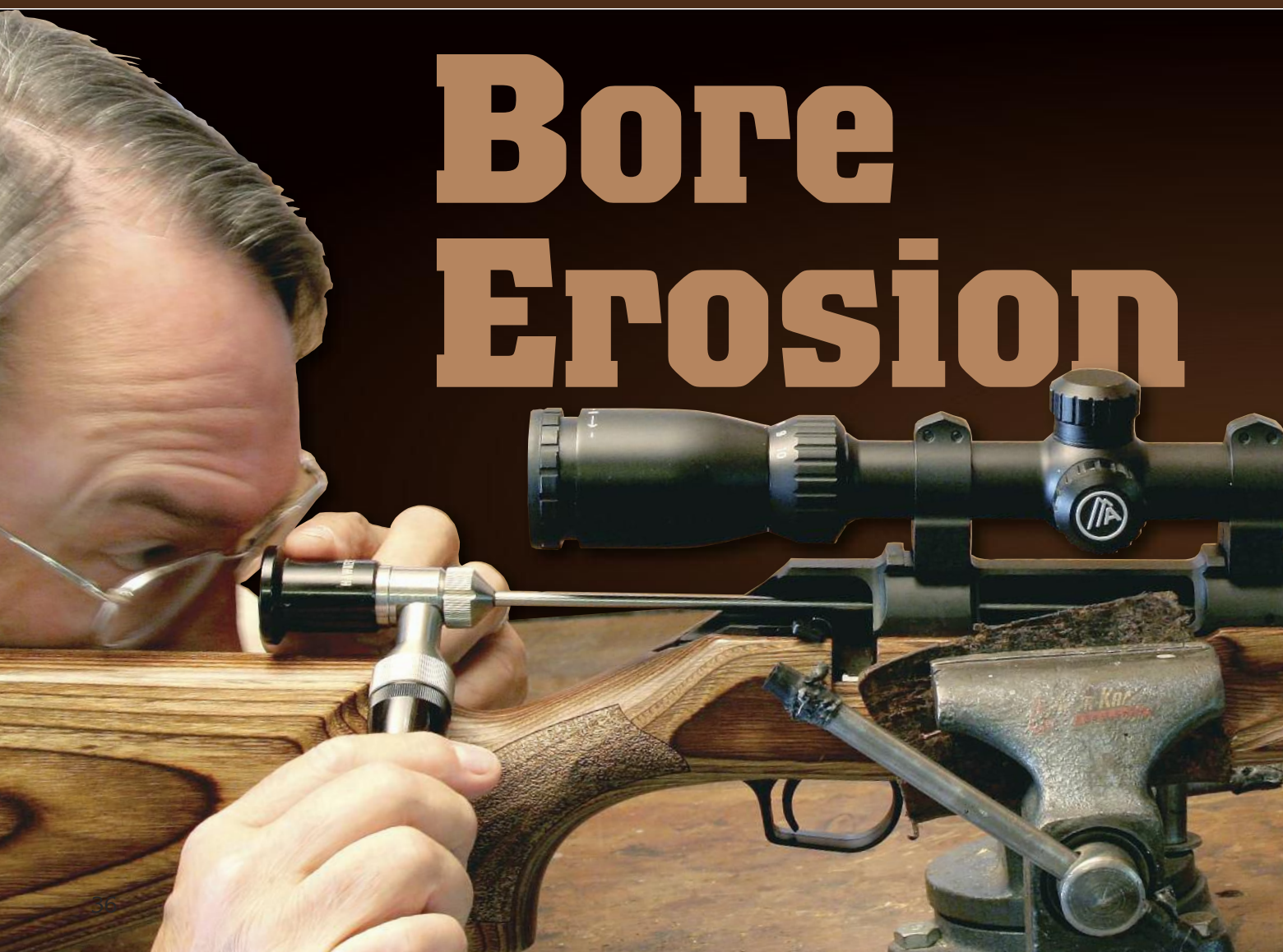
Unlike pickup trucks, few rifles wear out unless *really* abused. Rifles last longer because they're comparatively simple machines with fewer moving parts, and most aren't used nearly as frequently as pickups. What does tend to wear out is the barrel. Before smokeless powder and non-corrosive primers, most rifle barrels died from rust pitting, the result of hygroscopic residue left inside the bores, but these days barrels normally get "shot out" due to erosion.

Exactly what shot out means depends on the degree of accuracy required or desired. Many benchrest shooters replace barrels within 1,000 rounds, when accuracy would still be outstanding to the average prairie-dog shooter. Most prairie-dog shooters consider barrels shot out when they can't consistently hit a one-pound rodent at 300 yards, yet the same level of accuracy would be capable of consistently taking deer at 500 yards or more.

Today there's yet another kind of shot out, thanks to so many rifle loonies owning borescopes. The average shooter thinks a borescope will answer every question possible about rifle accuracy, including exactly when his barrels are toast. Even the comparatively mild .223 Remington often leaves visible signs of bore erosion within 250 rounds, yet the same barrel will remain capable of prairie-dog accuracy for several thousand rounds. While there are several valid uses for a borescope, predicting accuracy isn't among them. The real test of a shot-out barrel is a target.

Most shooters depend on "common wisdom," more

Bore Erosion



precisely called folklore, since it's based on oral and anecdotal history. Some shooters claim bore erosion is primarily caused by heat, though others say it's due to pressure – which, if you remember high-school chemistry, goes hand in hand with heat. Many shooters believe double-based powders cause more erosion than single-based powders, because double-based powders burn hotter. Other common beliefs are that throat erosion results in lower pressure, since the bullet has a longer jump to the lands. As with most folklore, there's *some* basis to these beliefs, but the truth is more involved.

There's been considerable scientific research on bore erosion, not surprisingly mostly military. The best condensation I've come across is a 40-page report entitled "Understanding and Predicting Gun Barrel Erosion," put together in 2005 by Ian A. Johnston for the Australian Department of Defence (the Commonwealth of Australia is a former British colony, so spells defense with a "c").

Johnston's report cites 82 research sources and lists

three interrelated causes for bore erosion: chemical, mechanical and thermal. Chemical erosion occurs when the components of smokeless powder gas actually alter the surface of barrel steel. Hydrogen and oxygen weaken the surface by lowering the melting point, but nitrogen (a major component of smokeless powder) actually strengthens the surface.

Mechanical erosion occurs when the projectile wipes away or even breaks off parts of the bore's surface. Mechanical wear is exaggerated in a hot bore, but some occurs on every shot, primarily resulting in rounding the edges of the lands.

Thermal erosion from high temperatures is indeed the major factor in modern, high-pressure cartridges. The primary heat source is burning powder, not bullet friction, so coating bullets with molybdenum disulfide – "moly" – doesn't have much effect on erosion.

Bore temperatures are highest immediately in front of the chamber, because all the powder that's going to burn does so by the time the bullet travels a short distance down the bore. The hot gas continues to expand,

The Truth About Shot-Out Barrels



Both shoulder angle and neck length affect the rate of throat erosion, the reason the .243 Winchester (left) tends to shoot out barrels faster than the 6mm Remington (right), despite the cases having similar powder capacity.

Bore Erosion

but since the powder is no longer burning and the volume of the bore behind the bullet increases, temperature starts to drop. Thus barrel erosion is most severe right in front of the chamber, the reason many shooters use the term “throat erosion,” even though some erosion takes place throughout the barrel.

Cartridges with more powder capacity for their bore diameter erode bores faster, because it takes longer for the powder gas to escape through the relatively small case neck, increasing heat duration. This is why the barrel of a .222 Remington heats faster than the barrel of a .22 Hornet when shooting prairie dogs, even when we shoot the Hornet just as fast and often – and the reason a .222's bore erodes faster than a .22 Hornet's.

For those who believe pressure is the primary factor in barrel erosion, the SAAMI maximum pressure standard for the .222 Remington and .22 Hornet are practically



Above, this Remington 700 started to lose its fine accuracy after a few thousand rounds but was mostly restored with some fire-lapping (right) of the eroded throat.

identical, 50,000 psi for the .222 and 49,000 for the Hornet. Also, a .22-250 Remington “downloaded” to 50,000 psi with a load of 35.0 grains of IMR-4895 and a 50-grain bullet will still fry barrels faster than a .222, because the .22-250 is still burning 10 grains more powder than maximum .222 loads.

Eventually the surface of the bore starts to crack. Shooters often call



this “gator skin,” because of its resemblance to the geometric patterns of alligator hide. Gator skin mostly occurs due to the steel's surface expanding and contracting as it heats and cools, but some elements also essentially melt from



At left is a custom James Calhoon rifle in .19 Badger, the .221 Remington necked down, with a shiny stainless barrel so it won't heat as quickly in the summer sun. Below, a Thompson/Center Icon .223 Remington has both a vented forend and flutes to help the barrel cool.





Left, on all but really hot days, barrels will cool quicker if rifles are placed in the shade, muzzle up, with the action open. Above, pouring cool water on a free-floating barrel doesn't do any harm at all.

ington a superior design. Powder capacity of the two cases is similar, but the 6mm's steeper shoulder and longer neck tend to extend barrel life. (Today, however, the longer 6mm case is often downgraded, because it doesn't leave as much room inside the standard "short action" magazine for longer, more streamlined bullets, and the .243 won the popularity contest long ago.)

Most modern, double-based powders don't burn much hotter than single-based powders, and the extra nitrogen from their added nitroglycerin tends to strengthen the steel's surface, counterbalancing the extra heat. However, some of the newer, super-progressive powders may increase the erosion rate, simply due to longer flame duration. An acquaintance who does a lot of long-range target shooting tried one of the new super-progressives advertised to push peak pressure farther down the bore. He says it burned out a 6.5 Creedmoor barrel faster than any other powder he's used. Obviously, this is anecdotal evidence, not scientific data, but it makes sense given the physics of bore erosion.

Boat-tail bullets accelerate throat erosion, apparently because the

the steel. Depending on its exact composition, steel melts at around 2,600 to 2,800 degrees Fahrenheit, but some common alloying elements melt at lower temperatures, such as sulfur at only 239 degrees Fahrenheit.

Once the bore starts to crack, the rate of erosion increases. Cracks slow the flow of hot gas, so some circulates in the eroded area rather than passing down the bore. Eventually the cracks deepen enough for chunks of steel to start breaking off, ultimately affecting accuracy because bullets don't enter the rifling as consistently.

Many ballistic laboratories have documented pressure rises as barrels start to erode, possibly due to extra bullet friction due to the roughness of gator skin in the initial stages of erosion or the expansion of softer bullets in the enlarged throat. They then "swage down" when entering the less-damaged rifling, resulting in a higher pressure peak. Eventually, however, deep erosion does extend far enough for peak pressures to drop.

A short case neck protects less of the bore right in front of the case, and a more sloping shoulder concentrates the flow of hot gas in front of the case neck. The .243 Winchester is a notorious barrel-burner due to its relatively long 20-degree shoulder combined with a short neck, one reason many shooters consider the 6mm Rem-



Americase

Firearms Cases Designed To Travel The World



**Over 100
Standard Case Models
Also Custom Cases
Made to Your Specs**



See all our cases at:
[**www.Americase.com**](http://www.Americase.com)
1-800-972-2737



CUSTOM BARRELING & STOCKS



David Christman, Jr.
Call or write for Price List & info:
 216 Rundell Loop Rd. - Delhi, LA 71232
 Telephone (318) 878-1395

Classic Checkering
 by Tim Smith-Lyon
"Professional Checkering since 1972"
 1225 Adams Lake Rd. - Utica, MS 39175
 Shop Phone: 601-885-9223
 E-Mail: classiccheckering@gmail.com
 Website: www.classiccheckering.com



OPTICAL SERVICES COMPANY

Custom power increase (+60%) for most target scopes. B&L, Bushnell, Leupold, Lyman AA & STS, Redfield 3200 & 6400, Sightron, Unertl, Weaver T, Steel T Series.

Rebuild & Blueprint • Benchrest & Varmint Bullet Drop Reticles

Cheryl Ackerman
 P.O. Box 1174 • Santa Teresa, NM 88008
 Tel: 915-740-4290
 E-mail: cheryl@targetshooteroptics.com
 www.targetshooteroptics.com

The NEW
Gebhardt Machine Co.

Rimfire Cartridge Gage



"The Gage That Works!" \$150⁰⁰

This is a gage to measure consistency of rim thickness on .22 rimfire ammunition (a .22 rimfire rifle's headspace is determined by case rim thickness). The more consistent the rim thickness, the more consistent the ignition of the primer and the powder charge in the case. In other words, the firing pin will fall the same distance every time if the same rim thickness is used on every case being fired for a particular group. By sorting the shells into various groups by rim thickness, a reduction in group size of up to 25% can be realized in some IF NOT MOST rimfire rifles. This information about group reduction comes from the .22 rimfire benchrest participants who compete in the extremely difficult BR-50 matches. All of the top shooters sort their shells into groups by checking rims and weighing the unfired cartridges.

Gebhardt Machine Co.
 101 Allison St.
 Lock Haven, PA 17745
 TEL (570) 748-6772
 Bill Gebhardt, Owner
 (NRA Benefactor Member - IBS Life Member)

Bore Erosion

boat-tail tends to prevent the rear of the bullet from "bumping up" and sealing the bore, allowing some hot gas to cut into the beginning of the rifling. Flatbased bullets seal the bore more effectively, especially thinner-jacketed bullets that bump up easily.

Barrel erosion can be slowed in several ways. Cartridges with less powder room for the bore size definitely slow erosion, as do cases with steeper shoulders and longer necks. Faster-burning powders also slow erosion slightly, since the powder charge is smaller, shortening duration of the burn. However, most of these conflict with the desire of many rifle loonies for more zip from flatter-shooting, boat-tail bullets.

The second obvious suggestion is not shooting so fast that barrels get really hot. However, repeated firing can't be helped in some target shooting due to time limits, and prairie-dog shooters apparently can't restrain themselves on big towns. Prairie-dog hunting, in fact, may have fried more barrels than any other form of rifle shooting, partly because it often takes place on hot summer days, but unlike target shooters, varmint hunters can allow barrels to cool by simply switching to another rifle. This is why many prairie-dog shooters bring several rifles.

Hot barrels cool quicker when rifles are placed in the shade, muzzle up and action open, allowing convection to suck cooler air from the chamber up through the bore. Many shooters also drape a wet towel over a hot barrel, and some use a hose to run compressed air or CO₂ through the bore. A number of people have marketed barrel-cooling devices of this sort, but I just take along a jug or two of cold water and pour it over the outside of warm barrels, with the

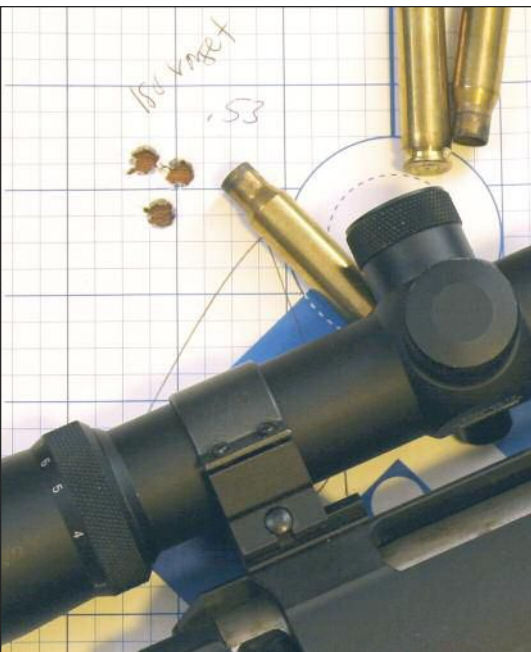
muzzle angled down at about 45 degrees.

Water works particularly well with free-floated barrels, like those on almost all varmint rifles and many big-game rifles. Excess water flows out the forend's barrel channel, although afterward it helps to hold the rifle with the muzzle straight down and jiggle it vigorously, getting rid of excess water, especially from the hollow forends of injection-molded stocks. Otherwise the next shot results in considerable spray, though on a hot July day this can feel pretty good.

Stainless barrels do last longer, partly because the melting temperature of 416 stainless, the alloy used for most stainless barrels, is 150 to 200 degrees higher than 4140, the common alloy for chrome-moly barrels. Stainless barrels also stay cooler when prairie-dog shooting under a hot sun, simply because their pale surface reflects more sunlight. Even without *any* shooting, a blued barrel can get so hot from the sun you can't hold a finger on its surface.

The popular metal finish CERAKOTE was originally developed as a heat-transfer paint for radiators, engine manifolds or any other metal device that gets hot. The "Cera" comes from the silica content of the coating, as in ceramics, and silica has a very high coefficient of heat transfer. A paler color of CERAKOTE definitely cools barrels more quickly, especially on hot, sunny days. Barrel fluting also helps, due to slightly increasing surface area, as do holes in the stock's forend to increase air circulation.

An eroded throat can be partially restored with a few fire-lapping bullets. This not only evens out cracking and chipping, allowing bullets to enter the rifling more consistently, but it also reduces the circulation of hot gas, extending barrel life. The barrel may not shoot like new but usually improves enough to last a while longer. The most accurate factory



A target is where the effects of bore erosion are noticed, not with a borescope. Most barrels start showing signs of erosion within a few hundred rounds.

rifle I've ever owned is a heavy-barreled Remington 700 .223 Remington that, when new, averaged five shots in .25 inch at 100 yards with handloads prepared using benchrest techniques. Several thousand rounds of prairie-dog shooting eventually opened groups to around .75 inch, but several years ago, I used a NECO fire-lapping kit to smooth the throat. Afterward the .223 started grouping into .5 inch or less. (NECO, 108 Ardmore, Benicia CA 94510; www.neconos.com)

Remedial fire-lapping is one application where a borescope really helps. I kept firing lapping bullets until all the gator skin disappeared. The same technique has also extended the life of several other hard-used barrels.

A barrel can often be set back a few threads and the chamber recut to eliminate some gator skin, but this requires a long shank so doesn't work with many lightweight big-game barrels. Reboring also works and has the advantage of not having to modify the stock's barrel channel, a definite plus with classic wood stocks. I've had excellent results from both Classic Barrel & Gun Works (339 Grove

Ave., Prescott AZ 86301; www.cutrifle.com) and JES Rifle Reboring (715 South 6th Street, Cottage Grove OR 97424; www.35caliber.com).

Eventually, however, many barrels must be replaced. Several rifle factories will replace barrels for a nominal cost, but all I've contacted only rebarrel to the original chambering, no doubt partly because thousands of rifle loonies would rebarrel their rifles whenever they grew bored with the present chambering. Thousands of practically new factory barrels are cheaply available, thanks to rifle loonies discarding them for custom barrels.

As a last resort, dozens of manufacturers produce new barrels all year round. As somebody once pointed out, anybody who shoots enough to wear out rifle barrels is pretty lucky. Apparently I've led a pretty lucky life. R

RMS CUSTOM GUNSMITHING
Robert M. Szweda
Classic Style Stocks and Custom Checkering.
Call: (928) 772-7626 or visit my web site:
www.customstockmaker.com

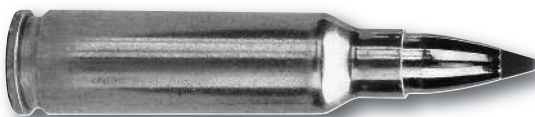
TrianglePatch.com
NEW In the gun bore they
do not get stuck
make more contact
"The .22 caliber triangle patches [tm] are the best patch I have ever used. . . . are the only ones I will use from now on."
Rifle reader, Lester D in Livingston LA, October 2011
worldwide Patent 336-608-9355 Pending

Classic BARREL & GUN WORKS
REBORING • RERIFLING
CUSTOM BARRELS
LENGTHS TO 36"
CALIBERS .22 TO .585
CHROME MOLY OR
STAINLESS STEEL
Dan Pedersen, Barrel Maker
339 Grove Avenue • Prescott, AZ 86301
dan@cutrifle.com • 928-772-4060

19 Badger / CZ 527 Rifle

"My all time favorite varmint cartridge!"

Quote from gunwriter Don Lewis, of Kittanning, PA after over 40 years of shooting and writing about shooting.



James Calhoon

"Fine Shootin' Bullets"

Also offering:

- 19, 20 and 22 caliber Varmint Bullets
- Custom CZ 527 Varmint Rifles
- CZ 527 accessories including: "Hunker" scope mounts, modified bolt handles, single-shot followers.

4343 U.S. Hwy 87
Havre, MT 59501
Ph: (406) 395-4079

www.jamescalhoon.com

From: **PRACTICAL** To: **TACTICAL**

Talley
THE WORLD'S FINEST OPTICS MOUNTING SYSTEM
PROUDLY MADE IN THE USA

talleyrings.com

9183 OLD NO. 6 HWY PO BOX 369 SANTEE, SC 29142 803-854-5700

John Haviland

The process of chambering a cartridge, shooting it and ejecting a fired case is part of the fun of shooting a rifle. A recently tested Dakota Arms Sharps .30-40 Krag provided lots of such enjoyment, since a fair amount of time was required to shoot the single-shot rifle. During two months that started with shooting at targets and cumulated in an antelope hunt, the rifle provided plenty of enjoyment.

A “Lightweight” .30-40 Krag

Dakota Arms refers to its scaled-down Model 1874 Sharps as its “Little Sharps.” Richard Spruill of Dakota said it is a lighter rifle than original Sharps 1874 rifles, which weighed 9 to 16 pounds and heavier. “By reducing the size of the original Sharps 20 percent,” he said, “you get a more user-friendly rifle for someone who does not want a .45-70 or other large-bore cartridge but still wants the traditional look and handling.” The sample weighed 7 pounds.

Spruill said Dakota designed its Sharps in 1998 and started making the rifles in 1999. “This is a specialized rifle, and Dakota does not make all that many every year,” he said. Because the rifles are mostly made to order, the sky’s the limit for options. The rifle I’ve been shooting was made as a showpiece. Its 29-inch barrel is octagonal out to the end of the “duckbill” tip of the splinter forearm and tapered round to the muzzle. The stock and forearm are made of maple with flaming fiddleback and a right-side cheekpiece with a shadow line. The wood is perfectly matched to the metal. Spruill said the maple stock blank sat on Dakota’s shelf for 2½ years before he picked it out for the rifle. The receiver and lever arm are color cased. The crescent buttplate and barrel are what Dakota calls “French grey.” The rifle’s vernier tang sight is provided by Montana Vintage Arms. The rifle carries a \$7,000 price tag.

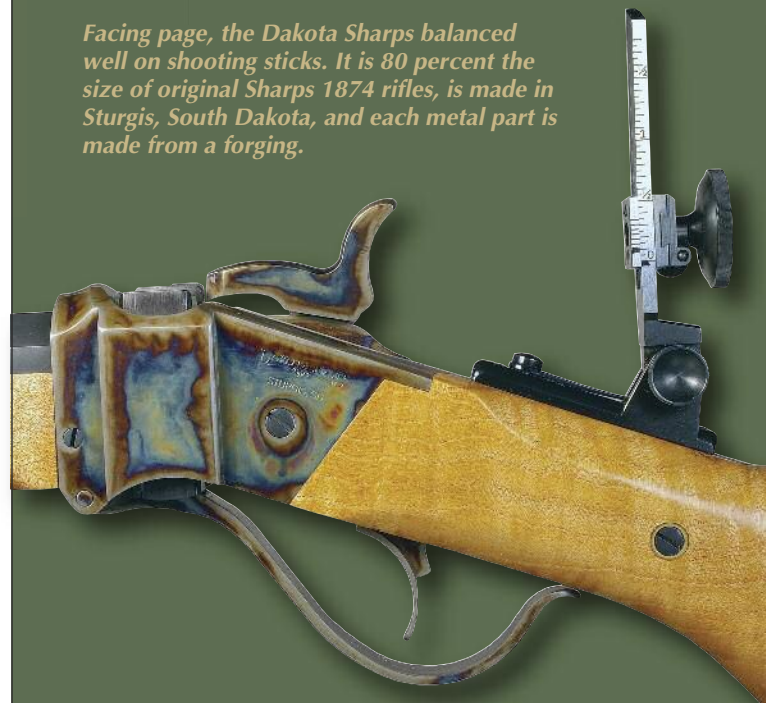
More embellishment is available, such as select Eng-

DAKOTA

lish or Bastogne walnut, a pewter forearm tip, barrel-band swivel and buttstock stud for attaching a sling, comb cartridge trap and double set triggers. A globe front sight or vintage 6x scope are also options. Tailored engraving and gold inlays add to the aesthetics.

The Dakota Sharps’ reduced dimensions limit the size of rimmed cartridges that will fit in its receiver. “I tried the .348 Winchester, but its rim diameter was just a bit too wide,” Spruill said. Still, the Dakota Sharps is

Facing page, the Dakota Sharps balanced well on shooting sticks. It is 80 percent the size of original Sharps 1874 rifles, is made in Sturgis, South Dakota, and each metal part is made from a forging.



chambered in plenty of rimmed cartridges. Rimfires include .17 HMR, .22 LR and .22 WMR. Cartridges Dakota refers to as “turn of the century” include .25-20, .32-30 and .44-40 WCFs. There are nine small-game cartridges from .17 Ackley Bee to .225 Winchester and handgun cartridges from .38 Special to .45 Colt. Deer cartridges include .25-35 WCF, 7-30 Waters, .30-30 WCF, .30-40 Krag and .38-55.

The Krag is a practical cartridge for the Sharps.

ARMS SHARPS



Plenty of .30-caliber bullets are available for handloaders to tailor loads for antelope to elk. The moderate powder capacity and long neck of the Krag case make it perfect for shooting inexpensive cast bullets. Recoil from full-power loads is quite mild from the 7-pound Sharps with its steel buttplate.

I've handloaded .30-40 Krag cartridges quite a bit over the years to shoot in a Springfield Armory Model 1898. The old rifle's best accuracy and velocity came

from Sierra 165- and 180-grain SBT GameKing bullets with H-322 powder. Remington factory loads with 180-grain Core-Lokt Pointed Soft Point bullets were close behind, although factory loads were, and still are, scarce on store shelves.

Spruill said the rifle shot well with 150-grain bullets, so I started reloading Hornady SST and Sierra SPT Pro-Hunter 150-grain bullets with a variety of powders. It was tempting to use loads from the *Hodg-*

DAKOTA ARMS SHARPS

don Data Manual No. 26 (1992) under the heading “.30-40 Krag Heavy Loads for Modern Rifles,” listing powder weights 3 to 8 grains above standard loads for powders like H-335, H-4895 and H-414 in order to gain 200 fps of additional velocity. The Dakota Sharps could no doubt handle the higher pressures, but that added velocity wouldn’t really provide an advantage at 200 yards with the iron sights. So powder charges remained relatively light, as suggested in the Hornady and Sierra reloading manuals.

The first few three-shot groups with 150-grain bullets measured 2 to 3 inches at 100 yards, which is not bad shooting with an aperture sight and a front bead. One group measured .94 inch with Hornady bullets and W-760. I thought that was somewhat of a fluke, but Sierra bullets and IMR-4350 shot a group nearly as tight. Velocities were fast, too, at 2,693 fps with the SSTs and 2,821 fps with the Pro-Hunters. Surely, the 29-inch barrel was responsible for those velocities so close to what the .308 Winchester produces from a 22-inch barrel.



The .30-40 Krag is a perfect match for hunting and target shooting with the Dakota Sharps.

Favorite loads for my Springfield Armory Model 1898 also shot great in the little Sharps. H-322 stacked three Sierra SBT 165-grain GameKing bullets in .84 inch. Two SBT 180-grain GameKings cut one hole, with the third bullet landing a bit higher. Three bullets from Remington loads grouped in .80 inch. Maybe that was purely accidental, but after two more bullets landed right in with the first three, perhaps groups under an inch were not a fluke.

Several cast bullet loads showed tight groups were definitely not a coincidence. The Krag’s long neck is perfect to hold a 200-grain cast bullet, and a bunch of bullets cast of wheelweights from an NOE 311299 202Gr. RN mould (as cast, 200 grains) were on hand. The NOE bullet’s accuracy was better than expected when shot with SR-4759. Accuracy was even better with a 1.62-inch group burning Accurate 5744. To verify the first A-5744 group wasn’t luck, three more

shots landed in 1.66 inches. With a velocity of 1,963 fps, the 200-grain bullet is pretty much a full-power load for the .30-40 Krag. The week before, I shot the NOE bullets and A-5744 from a .30-06 with a 3-9x scope, and the load shot about the same size group. The RCBS 308-165-SIL bullet and BL-C(2) is another favorite load for my Springfield. Turns out it was also a good load for the little Sharps with three of the bullets grouping a smidgen over an inch.

There is no concern about heating up the Sharps’ barrel while shooting. Some time is required to push the lever arm forward to lower the breechblock, push a cartridge into the chamber with the thumb, lift the lever to close the breech and cock the hammer. Peering through the narrow aperture of the rear sight to find the front sight and align it on the target takes more time. The view was dark through the pinprick diameter of the aperture but sufficient to see the black aiming circles on white paper at 100 yards. An aperture three times larger would be

Below, the rifle features a maple stock. The .30-40 Krag produces a mild enough recoil that the steel crescent buttplate was tolerable. Right, the vernier tang sight is provided by Montana Vintage Arms. Slightly unscrewing the aperture disk loosens the sight so windage and elevation can be adjusted.





Pronghorn were a challenge to hunt with the Dakota Sharps .30-40 Krag.

much better for hunting. Spruill said larger diameter apertures are available.

A cartridge or fired case is partially extracted from the chamber

when the lever arm drops the breechblock, but it extends below the interior of the frame, and the edge of the frame snags the case rim and blocks a case from sliding out the channel on the block. At first I clumsily reached around the tang sight and fished out cases with my index finger and thumb but eventually found it much easier and faster to turn over the rifle and shake out the case.

When the Sharps' breechblock rises on closing, it has no camming power, and cartridges must freely fit in the chamber. The NOE cast bullets have a forward section .300 inch in diameter. That diameter nose is a snug fit between the barrel's opposing rifling lands, and thumb pressure on the case head will push a cartridge fully into the chamber, but any tighter fit of a cartridge will not allow the block to close.

Hunting antelope is a sport of walking from one vantage point to the next to search the country for the white dots of game in the distance. I watched bands of 10 and 20 drift with the strong wind

Dakota Arms Sharps .30-40 Krag Loads

bullet (grains)	powder	charge (grains)	overall loaded length (inches)	velocity (fps)	group (inches)
150 Hornady SST	A-4350	48.0	3.030	2,513	2.87
	IMR-4064	42.0		2,590	2.03
	W-760	47.5		2,693	.94
	H-335	37.0		2,487	3.17
150 Sierra SPT Pro-Hunter	IMR-4350	51.0	3.089	2,821	1.20
	A-4064	44.5		2,715	2.58
	H-4831	50.0		2,504	—
	IMR-4895	43.0		2,623	3.08
169 RCBS 308-165-SIL cast	BL-C(2)	28.0	2.950	1,623	1.07
165 Sierra SBT GameKing	H-322	37.0	3.065	2,421	.84
180 Sierra SBT GameKing	H-322	36.0	3.080	2,401	1.89
178 NEI .175-308-GC cast	BL-C(2)	28.0	2.800	1,714	3.03
	RL-7	23.0		1,801	3.78
200 NOE 311299 202Gr. RN cast	IMR-4198	24.0	3.089	1,740	3.87
	A-5744	26.0		1,963	1.62
	RL-7	26.0		1,884	3.06
	SR-4759	22.0		1,856	2.23
180 Remington Core-Lokt PSP factory load				2,506	.80

Notes: All loads used CCI 200 Large Rifle primers. Remington cases were used with Hornady and Sierra bullets; Winchester cases, with cast bullets. Velocities were recorded 10 feet from the muzzle of a Dakota Arms Sharps with a 29-inch barrel. Groups were three shots fired at 100 yards.

Be Alert – Publisher cannot accept responsibility for errors in published load data.



Match Grade Rifle Bullets for Varmint Target Hunting Tactical

“The Berger Hunting VLDs are by far the most accurate and lethal hunting bullets made.”

... says Clinton Neff of Safford, AZ. He harvested this 94" Coues deer on a hunt in Southern Arizona. The buck was standing broadside at 257 yards, giving Clinton the perfect shot. After a single shot, the buck dropped right in its tracks.

Gear Specs:

Barrel: E.R. Shaw 9

Rifle: 6.5-08 Ackley

Action: Win Model 70

Load Specs:

Bullet: 6.5mm 140gr VLD

Powder: H4831



SHOOT BETTER SHOOT BERGER

Share your story with us at bergerbullets.com

Phone 714-441-7200





DAKOTA ARMS SHARPS

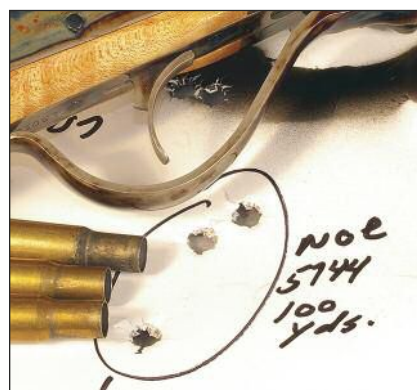
across broken country of rock ridges and basins between rolling hills. A few stalks ended with empty expanses of grass. The wind ebbed in late afternoon, and about 30 antelope had collected at the head of a bowl below a reef of rocks and ponderosa pines. Close as I could crawl, the rangefinder still read 350 yards to a buck at the near side of the herd.

My partner and I studied the flow of the land and decided if he walked around behind the herd and bumped them, they would run below the ridge and through a saddle in a ridge below. I hustled down to wait to the side of the saddle with the Sharps on shooting sticks and put a couple of extra cartridges, loaded with Sierra 165-



Clockwise from top: this group was shot with Sierra 165-grain GameKing SBT bullets and H-322 powder; this five-shot group at 100 yards was fired with Remington 180-grain Core-Lokt PSP factory loads; and this three-shot group at 100 yards was fired with bullets cast from an NOE 311299 202Gr. RN mould and A-5744 powder.

grain bullets and H-322 powder, in my shirt pocket. The rifle balanced well with the forearm over the sticks, and the long barrel stuck out like a yardarm. I swiveled the rifle back and forth to make sure



it would cover a wide area with a minimum of movement.

Twenty minutes later, the antelope came on the run. A couple of hundred yards out, they slowed to a walk. A buck stepped out of the line and stood broadside at 150 yards, and I cocked the rifle's hammer. The view through the aperture was dull, and I could not distinguish the buck enough from the drab sagebrush to precisely place the front bead.

The antelope trotted closer and stopped at 50 yards in a crowded bunch. They ran again, like a tight flock of birds, then stopped next to the saddle, distinct against the pale grass. A single antelope stood apart from the rest. The rifle's front bead came to rest on its white side, and it dropped before the sound of the bullet strike came back.

Once at the antelope, I looked back to where I had sat and ranged the distance at 218 yards. That was a pretty good shot. What made the shot even more of an accomplishment was that the buck was small, even by antelope standards. R

**NO WAITING AT MCMILLAN'S
NEW ONLINE STORE**

MCMILLANUSA.COM

Hundreds of stocks now in stock for your rifle.

MCMILLAN®
FIBERGLASS STOCKS

TOLL FREE 1-877-365-6148

Shoot to win.®

Cooper Firearms of Montana, Inc.

Made IN THE USA

Muzzleloader

Model 58 Dangerous Game

New for 2015

The Model 58 Dangerous Game rifle in classic big bore stopping cartridges, featuring a proprietary controlled round feed action.

The Model 22ML Muzzleloader offered with a 50 caliber match grade barrel and 209 ignition system.

* All Cooper Firearms rifles feature Wilson Arms barrels.



3662 US Hwy 93N, Stevensville, Montana, 59870 • (406) 777-0373

www.CooperFirearms.com

How the Lee-Enfield Saved Paris

Terry Wieland

In August 1914, the German 1st Army – 160,000 men under General Alexander von Kluck – was swinging through Belgium in a wide arc toward Paris. As the mailed fist of the Schlieffen Plan, Germany's blueprint for crushing France in six weeks, von Kluck's force, sweeping around the French left, was the key to victory.

In front of them, the French 5th Army was pulling back to avoid being outflanked. The situation was desperate when, on August 23, von Kluck's leading units ran into the newly arrived British Expeditionary Force (BEF) near the Belgian town of Mons.

Von Kluck's army outnumbered the British two to one. With the equally large German 2nd Army advancing on his left, von Kluck was confident of brushing the small British force out of his way. He threw his men against the British lines, only to run into a solid wall of gunfire.

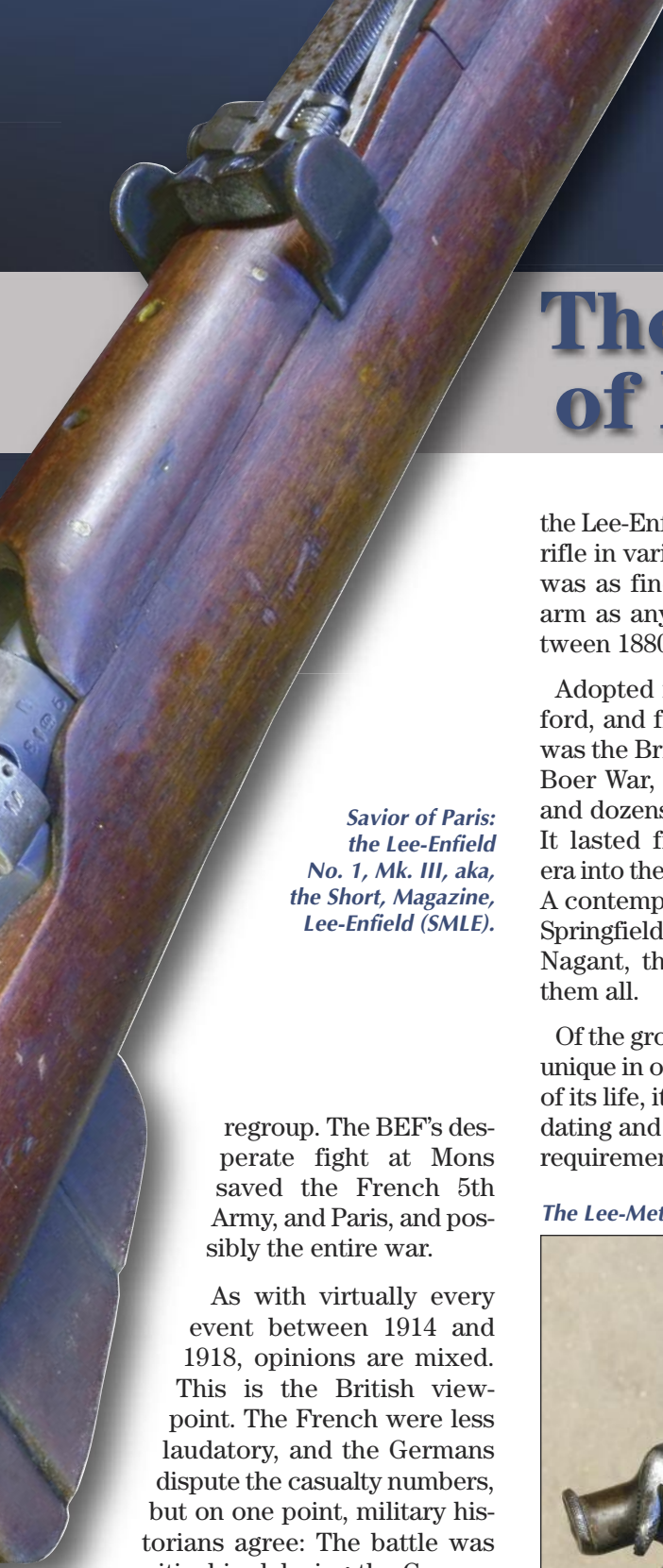
The Germans later reported they had encountered massed machine guns, but they were wrong. What they ran into was the devastating effect of the Lee-Enfield rifle in the hands of men who really knew how to use it. Although the BEF was small in numbers, it was comprised of some of the best soldiers in the world. There was no conscription in England, and its men were professionals, veterans of the small colonial wars Britain was constantly fighting around the world.

Since the harsh lessons of the Boer War in South Africa a decade earlier, the British Army had emphasized rifle skills – what they still quaintly called “mus-

ketry.” Infantrymen were expected to be able to fire 15 rounds a minute, while consistently hitting a man-sized target at 300 yards. Soldiers were allowed unlimited ammunition for practice and rewarded well for demonstrating skill.

This standard of fire and accuracy could not be matched by any army on the continent, and at the Battle of Mons, it paid off. The battle lasted two days. The British lost 1,638 men, the Germans about 5,000. More importantly, the stubborn British defense held up von Kluck's juggernaut for two precious days, allowing the French to





The Star of Mons

*Savior of Paris:
the Lee-Enfield
No. 1, Mk. III, aka,
the Short, Magazine,
Lee-Enfield (SMLE).*

regroup. The BEF's desperate fight at Mons saved the French 5th Army, and Paris, and possibly the entire war.

As with virtually every event between 1914 and 1918, opinions are mixed. This is the British viewpoint. The French were less laudatory, and the Germans dispute the casualty numbers, but on one point, military historians agree: The battle was critical in delaying the German offensive, and the Lee-Enfield was a key element.

It is often said the Germans went to war armed with a hunting rifle, and the Americans with a target rifle, but the British had a *battle* rifle. Although some might argue the fine points of that statement, it's essentially true. For all its faults,

the Lee-Enfield, the British infantry rifle in various forms for 65 years, was as fine a bolt-action combat arm as anyone came up with between 1880 and 1945.

Adopted in 1888 as the Lee-Metford, and finally retired in 1954, it was the British infantry rifle in the Boer War, two world wars, Korea and dozens of colonial brushfires. It lasted from the black-powder era into the age of the atomic bomb. A contemporary of the Mauser 98, Springfield, Mannlicher and Mosin-Nagant, the Lee-Enfield outlived them all.

Of the group, the Lee-Enfield was unique in one way: Over the course of its life, it underwent endless updating and modifying to meet new requirements. Not only were there

several distinct models, differentiated by number, but dozens of variations designated by asterisks. This resulted in serious confusion among all but the most demented Lee-Enfield lovers, who regard the confusion as just one more lovable trait.

Critics argue that these variations were a result of never getting it right, but in fact they were an early version of the later "continuous improvement" theory of industrial production. The British War Office was constantly involved in wars, large and small, with ever-changing requirements for infantry small arms. As well, it needed to equip different fighting arms, including the army, Royal Marines and Royal Navy. As newer weapons altered tactics, the Lee-Enfield evolved to keep pace.

The Lee-Metford, a direct ancestor of the Lee-Enfield, was adopted in 1888.



The Star of Mons

When a change was considered, prototypes were distributed for testing under field conditions. Field reports were studied and acted upon. In at least two instances, major changes were the result of lessons learned in full-scale wars – the Boer War (1899-1902) and the Great War (1914-18).

When the Lee-Enfield was adopted in 1888, it was a bolt action designed by James Paris Lee, a Scottish-Canadian-American who finally settled in New England. Its barrel used Metford rifling. When the shallow Metford rifling worked poorly with jacketed bullets, it was replaced by Enfield rifling, and the name changed accordingly.

Early models reflected the concerns of infantry officers of the day. For example, they had magazine cut-offs that allowed the rifles to be used as single shots. Military theoreticians were afraid that, with the Lee-Enfield 10-round box magazine, troops would waste ammunition by firing wildly. It also allows all 10 rounds to be kept in reserve, but immediately available.

The Lee box magazine was so far



The No. 1, Mk. III (top) and the No. 4, Mk. I are the two most famous models of the Lee-Enfield. The No. 1 was used in the Great War, 1914-18, but both saw service in the Second World War.

ahead of its time it was retained through every variation. If you look at the Lee-Enfield's competitors, you see how its detachable box magazine provided a huge advantage. First was the sheer number of rounds. The others had five- or six-round integral box magazines that had to be loaded, one way or another. The Mauser used stripper clips, while the Mannlicher used the packet-clip dropped in-tact into the magazine well.

Essentially, anything that any of the others could do, the Lee-Enfield could do better. An infantryman could carry spare, loaded magazines; he could reload his magazine one round at a time while it was in the rifle, or five at a time using stripper clips, or switch magazines altogether. Spare magazines could be easily topped up.

Another early Lee feature that survived to the end was the ability



Left, a major improvement to the No. 4, Mk. I was a ladder-type, receiver aperture sight.



Right, the Lee-Enfield, and early models of the Lee-Enfield, had a magazine cut-off for single loading, allowing the 10 rounds in the magazine to be held in reserve.



The Lee-Enfield's detachable, 10-round magazine, augmented by five-round stripper clips, was so far ahead of its time that it was retained through all the Lee-Enfield iterations.

to place the bolt on half-cock, rendering it safe while locking the bolt in place. This was in addition to the rocker safety on the left side of the action, which had the usual drawbacks of a safety; accidentally knocked off (although this was unlikely), it allowed the rifle to be fired or the bolt to pop open. The Lee-Enfield's half-cock position made either virtually impossible.

Half-cock was a holdover from early hammer rifles. Such a system is still the safest way of carrying any rifle with a round in the chamber. The longer you use a Lee-Enfield, the more you appreciate it.

Much is made of the British Army's experience in the Boer War, and some even go so far as to claim they were outgunned by the Boers, who were armed mostly with Mausers of various vintage. In reality, there is little real difference in long-range accuracy between the rifles of the Boers and those of the British. Any advantage lay mainly in the fact that Afrikaner farm boys grew up with rifles in their hands, and the average British infantryman did not.

The great lesson of the Boer War for the British infantry was in emphasizing rifle practice, both han-

dling and marksmanship. After 1902, rifle clubs sprang up all over England, and rifle matches became widely popular. In the army itself, cash rewards were given to soldiers who demonstrated skill with their rifles – a powerful incentive for underpaid infantrymen – and this paid off a decade later at Mons.

In some ways, however, the War Office hardly appreciated what a fine battle rifle it really had. The annual matches at Bisley, featuring both service and match rifles, with teams from all over the world, was a showcase for modern rifle development. The triumph of the .280 Ross in 1908, and its continued domination of long-range matches for the next five years, influenced War Office thinking. It began to look at a new .280 military round, similar to the Ross, that would give infantrymen more accurate fire and killing power out to 1,000 yards. Such a cartridge required a larger action, and to this

www. Rim Rock Bullets .net

Premium Cast Lead Bullets

Cowboy			Standard			Gas-Check		
.25	85 GR. RNFP/500	\$28.00	.32 Keith	125 GR. SWC /500	\$46.00	.38	158 GR. SWC-HP/100	\$21.50
.32	78 GR. RNFP/500	\$25.00	.380	95 GR. RN /500	\$30.00	.357	180 GR. LBT-WFN/100	\$24.00
.38	120 GR. TC /500	\$32.00	9mm	115 GR. RN /500	\$31.50	.41	230 GR. SWC /100	\$26.00
.38	125 GR. RNFP/500	\$33.00	9mm	125 GR. RN /500	\$33.00	.44	240 GR. SWC-HP/100	\$32.00
.38	130 GR. RNFP/500	\$34.00	.38	148 GR. DEWC/500	\$34.50	.44	240 GR. SWC /100	\$32.00
.38-40	180 GR. RNFP/500	\$42.00	.38	158 GR. SWC /500	\$35.00	.44	305 GR. LBT-WFN/100	\$39.00
.44-40	180 GR. RNFP/500	\$42.00	.40	180 GR. RNFP/500	\$41.00	.45LC	260 GR. SWC-HP/100	\$37.00
.45LC	160 GR. RNFP/500	\$44.00	.45ACP	200 GR. SWC /500	\$42.50	.45LC	325 GR. LBT-LWN/100	\$41.00
.45LC	200 GR. RNFP/500	\$44.50	.45ACP	230 GR. RN /500	\$46.00	.458	430 GR. LBT-LWN/100	\$49.00
.458	350 GR. RNFP/100	\$26.00	.45LC	255 GR. SWC /500	\$55.00	.500	440 GR. LBT-WFN/100	\$61.00

Prices subject to change without notice.

This is a good cross reference of the bullets we offer. We have about 144 sets of molds with new molds coming. Sixteen employees working 10 hr. a day shifts 4 days a week with 9 casters, 6 auto lubers and 12 star lubers gas checking every day.

We have bullets made with five different alloys that we order 40,000 - 60,000 lbs at a time a mixed per our set alloys.

Now in our new state-of-the-art 12,000 square foot facility!

Our Online Catalog Has Over 100 Different Bullets!

Everything is in stock
Specialty Sizing Available
Brinell Hardness from 4-22

Rim Rock Bullets
 35675 Minesinger Trail • Polson, MT 59860
 Telephone: (406) 676-3250
sales@rimrockbullets.net

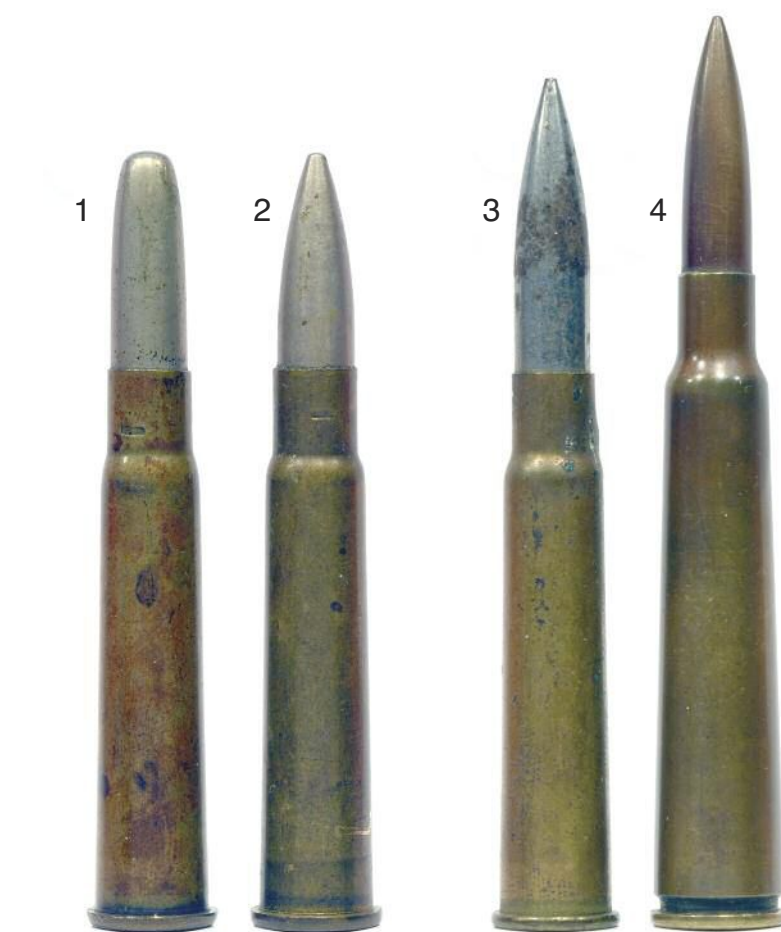
The Star of Mons

end the War Office designed what became the P-13 Enfield – essentially a magnum Mauser.

At the time, the No. 1, Mark III was the infantry rifle; the No. 2 series were .22s for smallbore practice; the P-13 would have become the No. 3 series. As it was, when war broke out, the project was suspended.

The lessons of 1914-18 were several. One was that the Lee-Enfield's firepower was a huge asset. The shelved P-14 (as it became known when reworked to use the .303 British cartridge) had a box magazine that held five rounds. It was reloaded either singly or five at a time from stripper clips – no better than the Mauser 98 or Springfield.

After 1918, the War Office recognized that the Lee-Enfield could be improved in some ways but saw no need for an entirely new rifle. A more powerful, long-range cartridge was deemed unnecessary, and anyway, they were operating under severe financial constraints. For the next 20 years, the British military budget was cut to the bone. There was no money for a new rifle, but modifying the existing Lee-Enfield was practicable. Changes included redesigning the action to make it stronger and eas-



The major military loads for the .303 British were the Mk. VI (1) with a 215-grain roundnosed, cupro-nickel jacketed bullet and the Mk. VII (2) with a 174-grain bullet, adopted in 1910. The .303 British match ammunition (3) was produced by the Ross Rifle Co. in Canada, and the .280 Ross match round (4) dominated competition for six years in the early 1900s.

ier to mass produce, simplifying the bolt, replacing the sights and providing a new bayonet.

The First World War was fought with the No. 1, Mk. III, but the Second World War was fought with both the new No. 4, Mk. I and the old No. 1, Mk. III. Both were widely used between 1939

and 1945, and both were in continuous production throughout that time. While British factories began production of the No. 4 in 1939, and the new war-time Canadian facility at Long Branch produced the No. 4, arms factories at Ishapore in India and Lithgow in Australia continued to produce the No. 1, Mk. III.

Critics of the Lee-Enfield single out two points as notably weak: It cocks on closing, and its locking lugs are at the rear, allowing case stretching. The latter is of no importance to an infantryman, and rear lugs allow replaceable bolt heads, with different lengths to adjust headspace. For military armors, this is a big advantage. The Lee-Enfield bolt is renowned for its slick operation, skimming back and forth with remarkable alacrity as a result of these design features. A practiced rifleman can keep his hand on the rifle's grip

Order Online or By Phone
(561) 584.8500

Stocky's
AMERICA'S GUNSTOCK SPECIALIST!

FREE SHIPPING*

CARBON FIBER SHELL

1.5 LBS ULTRALIGHT

MANNERS ELITE HUNTER REM 700 STOCKS

YOUR CHOICE \$599

Shop Online 24/7
www.NewRifleStocks.com

* USE COUPON CODE 'GOFREE'

and manipulate the bolt using only his fingers to flip it up and back, and his thumb to push it forward and down. This requires practice, but once mastered, it can be done with the rifle held at the shoulder. Even the straight-pull Mannlichers and Rosses hardly match it for speed.

In 1945, drawing on their jungle-warfare experience in Burma, the British redesigned the Lee-Enfield yet again. They shortened the barrel to 17 inches, fitted a flash suppressor, designed a new dagger-style bayonet, lightened the action, reduced the wooden forend and arrived at the No. 5, Mk. I – the famous “jungle carbine.” Although its battlefield use was limited, the jungle carbine established a reputation out of all proportion. The only problem was its “wandering zero,” but in close jungle combat, that was insignificant. It was no target rifle, but as a battle rifle, it was magnificent.

Modern evaluations of military rifles are often based not on suitability for war but on their potential for sporterizing or how practical they are for handloaders. One criticism of the Lee-Enfield is generous chamber dimensions that result in short brass life. Lee-Enfield chambers are roomy for a reason: .303 British ammunition was manufactured in dozens of munitions plants all over the world, and in wartime production, dimensions varied. A rifle had to accommodate whatever ammunition it was fed. Inability to do this, more than any other factor, spelled the doom of the Canadian Ross, an otherwise fine rifle. Although never publicized to the same extent as with the Ross, Lee-Enfields encountered chambering and extracting difficulties with some types of ammunition in 1915, but larger chambers kept these to a minimum.

For 65 years, the Lee-Enfield did everything a battle rifle was supposed to do. If they gave medals to rifles, the Lee-Enfield would have a chest full – starting with the Mons Star, 1914. R

May-June 2015



Rifle Tang Peep Sight

- Adjustable for Windage and Elevation
- Fits Most Lever-Action Rifles
- Blued Steel Finish
- Made in the U.S.A.

WWW.THEHAWKENSHP.COM

Tired of the gun fight?
Let's win it for good!
When you buy always ask for
The NRA Percent
Details? Enter NRA Percent on any search engine.

HOLLAND'S LONG RANGE SHOOTING SCHOOL

Trusted by Hunters World Wide as the go to Source for Long Range Shooting and Hunting Skills



A few openings left in our 2015 SEASON
Call for details and pricing

Call 541-493-5155 • HollandGuns.com

We now have three versions of the World's Finest Trimmer!

- **The Original WFT** – Designed for high-volume shooters. Each trimmer will trim a cartridge family, for example: the 308 Win. trimmer will also trim the 243 Win., 260 Rem. and the 7mm-08 Rem. Uses your 3/8" drill for power. Suitable for bottleneck cartridges up to 338 cal. **\$69.95**
- **The WFT II** – Our newest trimmer! A universal trimmer with interchangeable chambers. 80+ chambers available. Chambers will trim a specific caliber or case family like the original WFT. Suitable for bottleneck cartridges up to .45 cal. Requires a 1/2" chuck. Housing/Cutter assembly **\$69.95 + \$24.95** per chamber.
- **The "Big Boy" WFT** – Our scaled-up universal trimmer for the 50 BMG. Chambers available from 338 Lapua to 50 BMG. Requires a 1/2" chuck. Housing/Cutter assembly **\$69.95 + \$29.95** per chamber.

Does it feel like you have a mountain of brass to trim?
Get the W.F.T.! (World's Finest Trimmer) and make a molehill out of it!



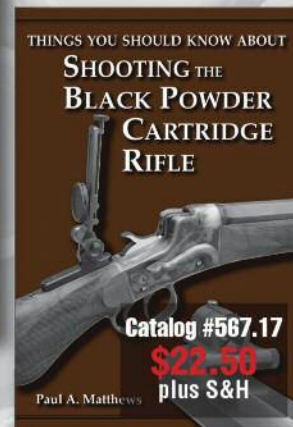
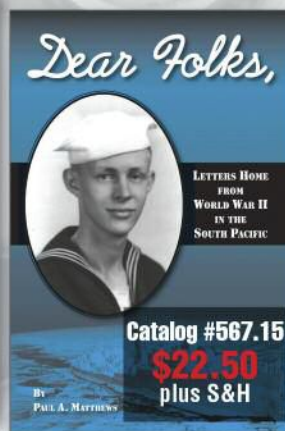
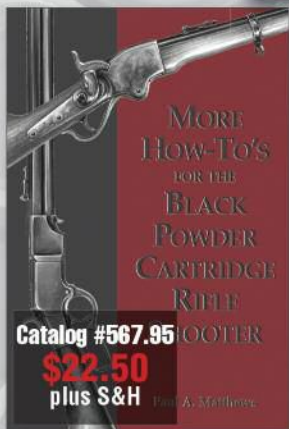
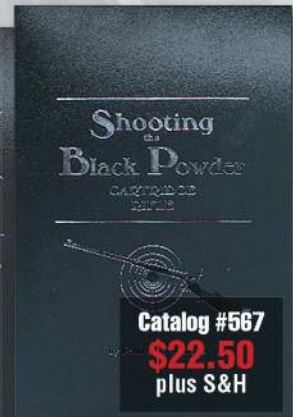
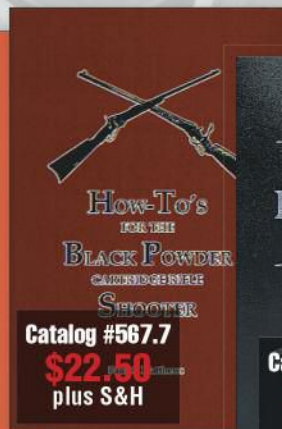
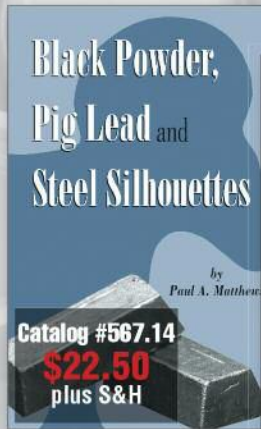
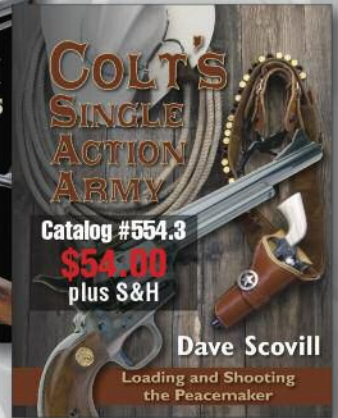
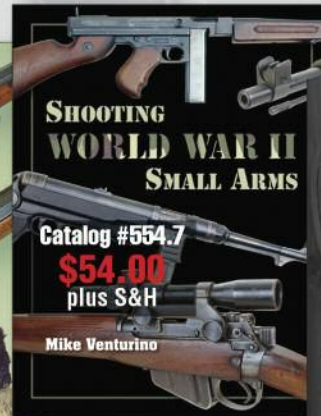
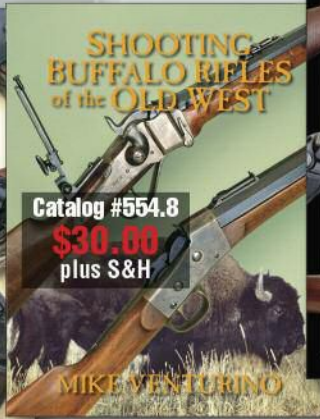
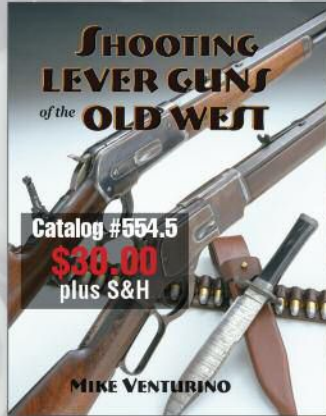
See our videos on YouTube!

Order Online at:
www.littlecrowgunworks.com

Little Crow Gunworks, LLC
6593 113th Ave. NE, Suite C
Spicer, MN 56288
Tel: (320) 796-0530

Custom Rifle Builders
Specializing in long-range rifles, precision barreling, muzzle brakes and metal work.

TOP SELLERS



Wolfe Publishing Co.

2180 Gulfstream • Suite A • Prescott, AZ 86301
Toll Free: 800-899-7810 • Fax: 928-778-5124

www.riflemagazine.com

Scan for more info.



Shipping & Handling:
\$7.25 U.S. Call for foreign rates.
AZ residents add 8.35% tax.

In Stock and Ready to Ship!

COYOTE RIFLES TRUTHS, LIES & MYTHS

100 PAGES: 800+ Handload Recipes!

RIFLE'S VARMINT
RIFLES & CARTRIDGES

Old Standards
222 Remington
223 Remington
225 Winchester
22-250 Remington
5.56 NATO

Barn BURNERS
201 Ruger 223 WSSM

Classic Wildcats
19 Caliber
219 Hornet

Catalog #566.VARMINT11
\$7.95
plus S&H

Pet Loads
4.5 Smith
By Ken Waters

RIFLE'S VARMINT
RIFLES & CARTRIDGES

Handload Options!
Cats
Accuracy Rocket
Tandem Rifle
Twist Rates
Bullet Selection Strategy

Catalog #566.VARMINT12
\$7.95
plus S&H

HANDLOADING HORNADY'S NEW .17 HO

RIFLE'S VARMINT
RIFLES & CARTRIDGES

The Easy Wildcat
22/6mm Texas Trophy Hunter

AR-15
TWIST RATES
Bullet Selection Strategy

223 Accuracy
The Basic Facts
Hornady's New .17 HO

Catalog #566.VARMINT13
\$7.95
plus S&H

Classic Cartridge
220 Swift
22 Remington
22-250 Remington

.17 VHA: SUBMACHINE GUN CARTRIDGE GOES VARMINT

RIFLE'S VARMINT
RIFLES & CARTRIDGES

Exclusive Load Data
6mm-204 RR
20 Tactical

224 Classic
Weathering the Storm

Catalog #566.VARMINT14
\$7.95
plus S&H

Do It All Powders

ALL NEW SPECIAL EDITION!

RIFLES Big BORE
RIFLES & CARTRIDGES

Historical 3000
Why the .450 is Best
.375 Super
Medium

Back-Up Plan:
Big Bores and
Dangerous Game

Catalog #536-SE2014
\$7.95
plus S&H

Shooting America's Favorite Rifle!

RIFLE'S LEVER GUNS
THE LEGACY OF

Special Features
devoted to:
• Marlin
• Henry
• Winchester
and More!

Find Your Rifle!
Winchester
Serial Number
Listing

Catalog #566.5
\$7.95
plus S&H

Reference for
Loading and
Shooting
Lever Actions!

RIFLE'S LEVER GUNS
THE LEGACY OF

Browning BLR
Goes Modern!

LOADS FOR
LEVERGUNS!

Marlin Lever
Actions:
An American
Classic!

Catalog #566.55
\$7.95
plus S&H

Unbeatable Savage 99

THE STORY OF POPE'S BARRELS

Catalog #568.1
\$39.00
plus S&H

**GUNSMITHING
Tips &
Projects**

Second Edition

Catalog #565.3
\$39.95
plus S&H

Ken Waters' Pet Loads
Complete
Volume

from
Handloader

Catalog #549
\$60.00
plus S&H

KEN WATERS' NOTEFBOOK

Catalog #549.21
\$19.99
plus S&H

"Best wishes for good shooting."
Ken Waters



Catalog #552.004E

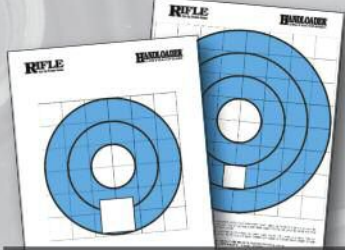


Catalog #552.004M



Catalog #552.004P

ELK, MULE DEER and PRONGHORN TARGETS
\$3.00 for 1- \$5.00 for 2 - \$10.00 for 4
plus S&H



Rifle Targets (20) - #552.R: \$4.95
Handgun Targets (20) - #552.H: \$4.95
COMBO TARGETS (10 each) - #552.C: \$4.95 plus S&H

Rifle - #RIDVD: \$350.00 **Handloader - #HLDVD40: \$499.00**
COMBO PRICE: \$599.95 plus S&H
Magazine subscribers save even more!



Mike Venturino
Photos by Yvonne Venturino

Like most American students of military history, I've always looked east or west but seldom south. In fact, it came as a surprise that the South American nations fought so many wars of such ferocity. For example, according to the book *Military Mauser Rifles of the World* by Robert W. D. Ball, in the 1865 to 1870 War of the Triple Alliance, with Paraguay fighting against Brazil, Argentina and Uruguay, over 95 percent of Paraguay's males perished.

Whatever reasons those nations had to fight, they needed weapons to do so. Once the smokeless era dawned and bolt-action rifles became the norm, one name reigned in South American small arms. It was Mauser. According to Ball's book, Mauser design rifles were made in numbers exceeding 100 million. Between 1891 and roughly until about 1950 when autoloaders began succeeding them, most South American nations equipped their military forces with Mauser rifles. At least two countries undertook to produce their own Mausers – Argentina and Brazil.

Other South American countries purchased their Mauser rifles from Germany, Austria, Czechoslovakia, Belgium and Spain. Speaking very generally, smokeless powder, bolt-action Mauser rifles came in three varieties. The early ones (circa 1889) made for Bel-

The vast majority of South American Mausers were chambered for 7x57mm or 7.65x53mm. Front is an Argentine Model 1909 carbine with a turned-down bolt handle. Rear is a Chilean Model 1912 rifle with a straight handle.



THE OTHER Mausers

South America had its own variations.



The Brazilian crest on the Model 1908 was made by DWM in Germany.



The Chilean crest on the Model 1912 was produced in Austria.



Produced by Mauser-Werke in Oberndorf, the Chilean Model 1935 was stamped with this logo.



On its rear receiver ring, the Chilean Model 1935 was stamped with the Mauser Banner.



This Argentine crest is on its domestically produced Model 1909 carbines.

gium had single-column, five-round magazines extending beneath their wooden stocks directly in front of the trigger guard. Very slightly changed, the Belgian Model 1889s became the Argentine Model 1891. They were also used by Bolivia, Columbia and Peru.

Four years later the Spanish Model 1893 appeared. (There was also a short-lived Spanish Model 1892.) Spanish-speaking nations of South America tended to follow the mother country in many trends, and the Model 1893 Mauser was one of them. This new Mauser variant was also fitted with a five-round magazine but had the new staggered column type contained within the stock. With minor variations, the Model 1893 was adopted by several South American armies, such as the Brazilian Model 1894 and Chilean Model 1895. That latter version was also adopted in identical form, except for its identifying crest on the front receiver ring, by Paraguay and Uruguay.

Next arrived Mauser's rifle that set most of the world's armies on their ears – the Model 1898. Very quickly many Mauser-equipped militaries around the world labeled theirs with only two locking lugs and the firing pin cocking upon bolt closing as “obsolete.” They began transitioning to Model 1898s with three locking lugs and the firing pin cocking on the bolt opening. Brazil's was the Model 1908. Argentina's was the extremely well regarded Model 1909. Chile's was the lesser known Model 1912. Most other South American countries followed suit.

In a study of Ball's book, it quickly becomes evident that South American military thinkers liked three basic versions of Mausers regard-

less of exact model. The most common from the 1890s into the early years of the twentieth century were rifles usually with barrels 29 inches long, give or take a fraction. Most countries had carbine versions with the same model number for their cavalry and engineering units. These generally had barrels 18 to 22 inches in length. Then in the 1920s and 1930s, the trend developed for “short rifles.” Usually these were simply the earlier rifles with barrels shortened to about 23 to 24 inches. It seems here that the South Americans were simply following the trend started by the Czechs with their VZ24 and Germany with its “Standard Modell,” which was the basis for the K98ks of World War II.

Military organizations of South America seemed to have open minds concerning updating their bolt-action rifles as new developments occurred, but they were certainly stuck on two cartridges. The very first smallbore, smokeless powder round introduced by the Mauser firm for bolt-action rifles was the 7.65mm Mauser. Because of the nations that adopted it, today's reloading manuals variously describe it as 7.65x53mm Belgian (*Hornady Handbook of Cartridge Reloading 8th Edition*) or 7.65x53mm Argentine (*Lyman Reloading Handbook 49th Edition*). Other South American countries to adopt this round at one time or the other were Bolivia, Peru, Paraguay, Ecuador and Columbia.

It is hard to find fault with the 7.65x53mm, either as a military cartridge or for sport. According to Lyman's book, military loads (circa 1889) used 215-grain bullets at about 2,000 fps, but around the turn of the nineteenth/twentieth cen-

THE OTHER Mausers

These three rifles were built in Europe for the Chilean government over a 40-year period. Top to bottom: Model 1895, Model 1912 and Model 1935.



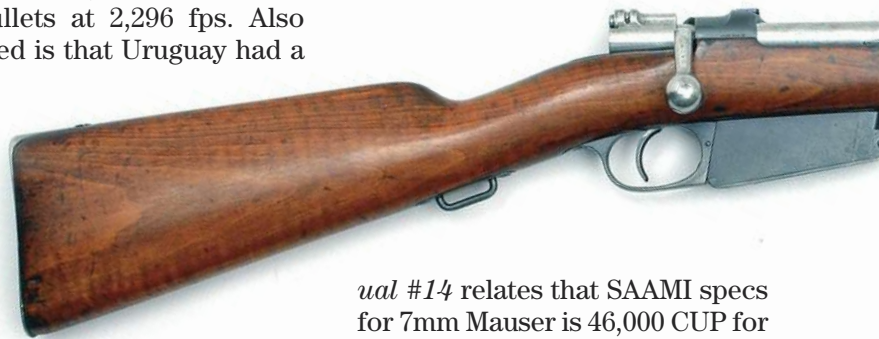
turies, that was upgraded to a 185-grain bullet at 2,590 fps. Because pre-Model 1898 Mauser rifles were weaker, this next load listed in Lyman's handbook was probably meant for Mauser's stronger '98s. It had a 154-grain bullet at 2,750 fps. For modern sporting riflemen, that puts the 7.65mm Mauser between .308 Winchester and .30-06s in regard to ballistics. Interestingly, it took the United States military until 1952 to develop the 7.62x51mm (aka 7.62 NATO), which is the ballistic equal of the 7.65 Mauser from the early 1900s.

The other chambering that gained widespread acceptance in South America was the 7x57mm Mauser, with the reason for its popularity

being that it was Spain's military cartridge for many decades. According to my research, the countries primarily adopting the 7mm were Brazil, Chile and Uruguay, with Columbia also buying some 7mm's, which they labeled Model 1904. According to *Cartridges of the World 9th Edition*, original Spanish military loads had 173-grain bullets at 2,296 fps. Also mentioned is that Uruguay had a

that country, along with Brazil, labeled Model 1908.

By consulting a variety of sources, it appears Mauser rifles for the 7.65x53mm had rifling twists of one turn in 9.8 inches and those for the 7x57mm had one-in-9-inch twists. Nominal bullet diameters, in the same order, are .311 and .284 inch. *Speer's Reloading Man-*



ual #14 relates that SAAMI specs for 7mm Mauser is 46,000 CUP for pre-'98 Mauser rifles and 50,000 CUP for '98s (in good condition) and modern-made sporting rifles. Lyman's handbook states there

load with a 142-grain bullet at 2,740 fps. Again, it was probably meant for stronger '98 Mausers, which



These two rifles are a Brazilian Model 1908 (top) made in Germany and the Argentine Model 1909 carbine made domestically.

are no SAAMI pressure specs for 7.65mm Mauser and cautions hand-loaders to be careful with Mauser models made prior to the Model 1898s.

That both of South America's premier military cartridges were once chambered in Winchester and Remington sporting rifles might be surprising. For reasons unexplainable, the 7x57mm gained and still holds significant popularity in America, but the 7.65x53mm does not. Evidence of this is the fact that our big three ammunition manufacturers still produce a variety of 7mm Mauser factory loads. In recent times only Hornady makes 7.65mm Mauser factory loads, and then only for a specific distributor.

It is worthy of note that after World War II, at least Brazil and Columbia transitioned to .30-06 for their bolt actions. These were built on Model 1898 receivers and were of the short-rifle configuration.

Without actually trying to collect South American Mausers, I now



Note the magazine extending below the stock of this Model 1891 Argentine carbine.

find myself in possession of five – and a few photographs of one owned previously. Instead of trying to describe all the variations found in South American Mausers in the six or more decades they ruled, which Robert W.D. Ball did so well in his book, those rifles in my racks will be the focus.

The oldest is a Chilean Model 1895, a full-length rifle with a 29.6-inch barrel. It is marked *Manufatura Loewe Berlin*. As related earlier, this model is based on Spain's Model 1893. Its sight is a flip-up ladder style with graduations to 20 – presumably meaning 2,000 meters. Interestingly, with the rear sight at its lowest setting, the marking is 5, again, presumably 500 meters.

From here on all my South Amer-
May-June 2015



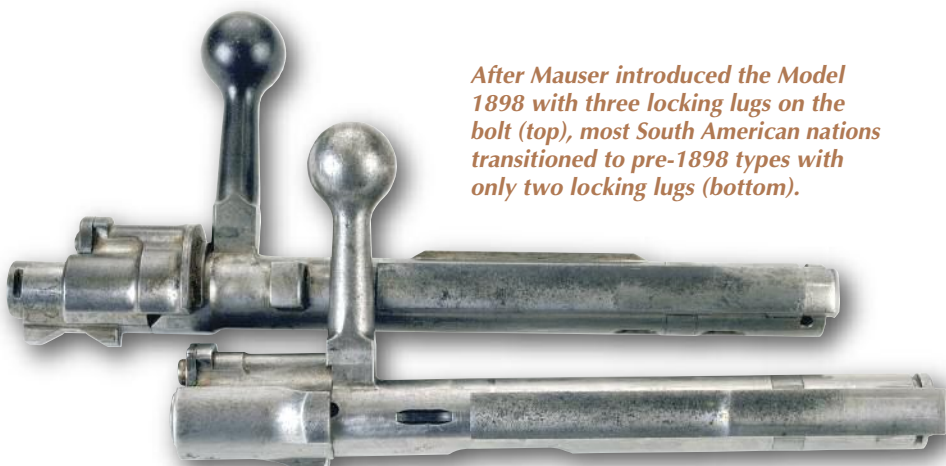
Left, this top view of the unique front sight of a Chilean Model 1935 shows its blade sits in a dovetail slanted from left to right. Right, the Argentine Model 1909 carbine also has a unique front sight arrangement that can be drifted for windage only when removed from the rifle.

ica Mausers are based on the Model 1898 action. The earliest is a Brazilian Model 1908. It has a 29.25-inch barrel and was manufactured by Deutsche Waffen Und Munitions Fabriken Berlin. The rear sight on this rifle is also graduated to 20, but its lowest setting is 3. It is of the tangent type instead of a flip-up ladder style. There is one other difference. The Chilean Model 1895 has a straight-grip stock, but the Brazilian Model 1908 has a pistol-grip stock.

a straight-grip stock that extends almost to the 21.5-inch barrel's muzzle. Whereas the first two Mausers described above have straight bolts, this Model 1909 carbine has a turned-down bolt handle. As befits a carbine meant to be carried across a horseman's back, its sling swivels are on the stock's right side. The rear sight is a tangent type with a maximum marking of 14, and its lowest setting is at 2, which is more suitable for a carbine zero. Most of the steel on this carbine is blued, but the receiver was left in the white.

A feature I have not noticed on other Mauser '98s is that the bolt release on the action's left side has a curved piece extending over the rear bridge. I wondered why it was made so until using it. Grasping it is far easier than the traditional nub on Mauser bolt releases.

The front sight on this Model 1909 carbine is interesting. Most Mauser bolt actions have a post-type front sight dovetailed to a



After Mauser introduced the Model 1898 with three locking lugs on the bolt (top), most South American nations transitioned to pre-1898 types with only two locking lugs (bottom).

THE OTHER Mausers

stud fitted atop the barrel. The front sight adjustment for windage is easily drifted laterally as needed. This carbine's setup is very different. The forend cap completely circles the barrel, ending with protective "wings" on either side of the sight. Inside that, the front sight blade is dovetailed to a piece of steel held inside the forend cap. The sight can be drifted laterally in that piece of steel, but it must be removed from the forend cap beforehand. A screw in the cap's right side secures it. I've never previously encountered a similar arrangement. Of my current five South American Mausers, this Model 1909 carbine is the only one chambered for 7.65x53mm.

As said, after Mauser developed the stronger Model 1898, most South American nations using Mausers transitioned to it. The Chileans did so with their Model 1912, which was produced for them by Osterreichische Waffenfabrik-Gesellschaft but marked more simply *Waffen Fabrik Steyr* of Austria. The Chilean Model 1912 had a 28.75-inch barrel with a pistol-grip stock. The rear sight was



Above, with military open sights on his South American Mauser rifles, Mike's average groups at 100 yards are about 2½ to 3½ inches. Right, early 7x57mm (1) and 7.65x53mm (3) rifles were used with their respective bullet weights, 173 and 215 grains. The new rounds are Federal 7x57mm (2) and Hornady 7.65x53mm (4) with bullet weights of 140 and 150 grains, respectively.



South American Mauser Velocities

rifle	caliber	barrel length (inches)	load (grains)	velocity (fps)	variation (fps)
Brazilian Model 1909	7x57mm	29.25	140 Federal spitzer	2,840	20
Chilean Model 1935	7x57mm	21.50	I	2,639	63
Argentine Model 1909	7.65x53mm	21.50	150 Hornady spitzer	2,861	42

Notes: Chronograph readings taken with start screen at approximately 6 feet. Readings are for five shots per load.

the tangent type graduated to the usual 20 for a long-barreled rifle with battle zero at 3. The bolt handle was straight and finish was

blue, except the receiver was left in the white.

Here's an interesting bit of Chilean Model 1912 trivia. Not long after Chile adopted them, Austria-Hungary was instrumental in setting off what became World War I. Short of armaments, it stopped shipments of finished Model 1912s to Chile and issued them to its own troops. I have read that Model 1912s with documentation as used by Austrian troops bring premium prices.

As far as my own South American Mauser rifles go, I've saved the best for last. It also came last chronologically and was not actually used by an army but instead was a type for a border patrol/paramilitary organization. It is the Chilean Model 1935 Carabineros Carbine. It has a 21.50-inch barrel, pistol-grip stock and is stamped *Mauser-Werke AG Oberndorf*.

It is rare: According to one source,

Rifle 280

PRESLIK'S GUNSTOCKS

- California Claro & English -
- Imported French, Bastogne -
- Turkish Circassian & Maple -

James Preslik - 4245 Keith Ln.
Chico, CA 95973 (530) 891-8236

4D Reamer Rentals LTD. Save Time & Money Rent!



www.4-dproducts.com 406-752-2520

The **BEST**



DAVE

MANSON PRECISION REAMERS

In the **Business**

Muzzle Crown Kit



Muzzle Crown Refacing Tools allow you to cut or re-cut a precision crown without removing the barreled action from the stock. A hand operation that's complete in less than five minutes, these tools will make money for you while restoring a gun's accuracy lost due to a damaged crown. The carbide inserts cut smoothly, last indefinitely, and are easily replaced if damaged. **Look for You Tube Demonstration of Muzzle Crown Kit**

8200 Embury Road, Grand Blanc, MI. 48439

Phone: 810-953-0732 Fax: 810-953-0735

www.mansonreamers.com david@mansonreamers.com

only about 10,000 were made. That is something of which I was totally unaware when buying it. My attraction was merely its fine condition. Incidentally, as opposed to the Chilean Model 1912, the Model 1935 has a full blue finish. It has sling fixtures on the bottom of the rifle and its left side. I was disappointed at first that the swivels themselves were missing but took comfort that at least the original sling was still on the left side. Then I noticed in Ball's book that the Model 1935s photographed there also show rifles with no bottom swivels.

The Model 1935 is almost a duplicate for Mauser's "Standard Model" of the same time frame, right down to the Mauser logo stamped on the receiver, which collectors refer to as the Mauser Banner. Another deviation from usual Mauser features is the front sight. It has protective wings, but instead of the sight blade being in a dovetail, it sits in a slot slanting from left to right. Windage can be changed by moving the sight blade fore and aft in the slot. The rear tangent sight is graduated to 14, and its lowest setting is 1.

A visiting friend looking over my South American Mausers asked why the "new" interest. I replied, "I bought these rifles for no other reason than their fine quality." They are all wood and steel. All parts are well machined with no stampings. Metal finish is of a quality seldom seen today.

How do they shoot? With my Medicare-aged eyesight and their open rear notches, I get about 2½- to 3½-inch groups at 100 yards with factory loads. I am in the process of obtaining brass and dies for the 7.65x53mm but do handload the 7x57mm. So I zeroed the Brazilian Model 1909 and Chilean Model 1935 and spent an afternoon banging away at steel targets at 100, 200 and 300 yards. After just a few shots for familiarization, I seldom missed, even at 300 yards. That's saying something considering military sights and my aging eyesight. R

Ed LaPour Gunsmithing 3-Position Safeties for:

M-98, CZ 550 & BRNO ZKK 600
Win. 70, 54 - Spgfd. 1903, 1922, - Enf. 1917
Swedish Mauser 94, 96 - Rem. M30
Sako Pre Model 75
Sako Vixen



Send \$2.00 for information:

908 Hayward Ave. - Bremerton, WA 98310
Tel: (360) 479-4966 Fax: (360) 479-3902
www.edlapourgunsmithing.com

PMA TOOL

Precision Made American Reloading Tools

Innovative Reloading Equipment for the Accurate Rifleman!

PMA Micro Die Adjuster

www.pmatool.com
Catalog: 260-246-5860 or support@pmatool.com

C. Sharps Arms, Inc.

- HIGHWALLS
- LOWWALLS
- SHARPS
- HEPBURNS

IN STOCK OR TO BUILD (120 DAYS)
WWW.CSHARPSARMS.COM
PHONE 1-406-932-4353 MADE IN U.S.A.

FINE CUSTOM RIFLES

- Custom Rifles Built to Order •
- Highly Efficient Muzzle Brakes •
- Barrel Lining for Accuracy Restoration •

Dennis E. Olson Gunsmithing
P.O. Box 337 - Plains, MT 59859 - (406) 826-3790

QUALITY CARTRIDGE

- Custom, odd, obsolete and specialty cartridge cases
- Wildcat cartridge development
- Manufacturing OVER 450 calibers
- Correct headstamped wildcat brass

www.qual-cart.com
P.O. Box 445, Hollywood, MD 20636 (301) 373-3719

WORLD'S FINEST PRODUCTION RIFLE BARRELS

DOUGLAS
ULTRARIFLED

BARRELS IN MOST SIZES,
SHAPES AND CALIBERS.

- Stainless Steel or Chrome Moly •
- AFFORDABLE QUALITY-

Write for free information to:

DOUGLAS BARRELS, INC.

5504 Big Tyler Rd., RM5
Charleston, WV 25313
304-776-1341 FAX 304-776-8560



WE'VE GOT YOUR
NUMBER!



Subscribe to the Ultimate
Online Loading Manual

Access over 293,000 loads with a
powerful search engine referenced
by calibers, bullets and powders.

LOADDATA.com

also features exclusive articles by
noted writers and online shopping
for your favorite products!

LOADDATA.com



MARCH RIFLESCOPES

INSIDE PRODUCT NEWS by Clair Rees

Of the wide variety of March riflescope models available, two are designed specifically for hunting. They include compact 1-10x 24mm and 2.5-25x 42mm scopes. According to the Australian manufacturer, each March scope is hand-assembled with every component either hand-lapped in place or glued where applicable, and they are designed to handle the toughest competition, tactical and hunting situations. This includes rifles developing serious recoil.

"March scopes are the most compact scopes ever made to achieve 10 times zoom ratios and 80x magnification with a 10 yard minimum focus," the company says. "Target

ranging is accurate at any power. The 3x-24x 52mm model comes in two versions, the Mil Radian (Mil) and the Minute of Angle (MOA)."

Illuminated and nonilluminated reticle versions are available, as well as standard and low illumination modules. Both modules provide four levels of reticle intensity (red).

First focal plane design means regardless of the magnification level chosen, the reticle subtension remains the same. Shooters can use the reticle for hold-over points at calculated distances regardless of the magnification chosen. The reticle in FFP scopes becomes thicker as magnification



is increased, allowing target acquisition at both low- and high-magnification levels.

MSRP: 1-10x 24mm – \$1,850 to \$2,000, depending on reticle; 2.5-25x 24mm – \$2,000 to \$2,350, depending on reticle. For more information, contact Kelbly's Inc., 7222 Dalton Fox Lake Road, North Lawrence OH 44666; or visit online at: www.kelbly.com.

Tenzing TZ 721 Waist Pack

Hunters who sit in a blind or tree stand don't need a bulky backpack unless they plan on spending several days afield. I've spent a fair amount time in both ground and tree stands, where large packs only get in the way. You'll still want to have essentials like grunt calls, knives, rangefinder, binocular, ammunition, keys and a phone readily accessible when needed.

Designed for the "grab-and-go" hunter, Tenzing's new TZ 721 Waist Pack offers a solution for those who sit on stands. The pack has room to spare, as well as the comfort of core-heating technology.

Featuring a breathable mesh waist, padded hip panels and an adjustable waist belt system, the TZ 721 is designed to be worn as a fanny pack while traveling to or from the field. Once at your stand, the TZ 721 can be quickly repositioned to the front to keep contents accessible and make use of a plush, built-in muff as a cozy place for cold hands. Four specialized, strategically placed pockets accept hand warmers.

Available in Realtree Xtra and Mossy Oak Break-Up Infinity, the TZ 721 features 17 total compartments and pockets – a place for everything. A pocket inside the top flap of the main compartment allows for smartphone operation without ever removing the phone from the pack. Open-topped side compartments with adjustable bungee cords are ideal for rangefinders and binoculars, while the pack's



face pocket and sub-compartments accommodate calls, tags, wallet and extra ammunition. The 294 cubic-inch main compartment is perfect for gloves, hats, knives, keys or cameras. Webbing and compression straps at the bottom of the pack come in handy for securing extra items like rattling antlers or a jacket.

Tenzing's waist pack weighs 2 pounds and additional features include a strong DYNEEMA bottom covered with a soft TRICO material that makes the pack extremely quiet in use. A zipper near the pack's bottom conceals a Vel-

SHEEP RIVER HUNTING CAMPS
Traditional Fair Chase Alaskan Game Hunts!

- **Brown Bear**
- **Black Bear**
- **Moose**

Ed Stevenson
1819 S. Henry Aaron Dr. • Wasilla, AK 99623
907-745-0479 • hunting@mtaonline.net
www.alaskan-brown-bear-hunts.com



cro strap, providing addition waist belt adjustability. The pack holds 770 cubic inches of gear. MSRP: \$129.99. For more information, visit online: www.tenzingoutdoors.com.

Caldwell CrossWind Professional Wind Meter

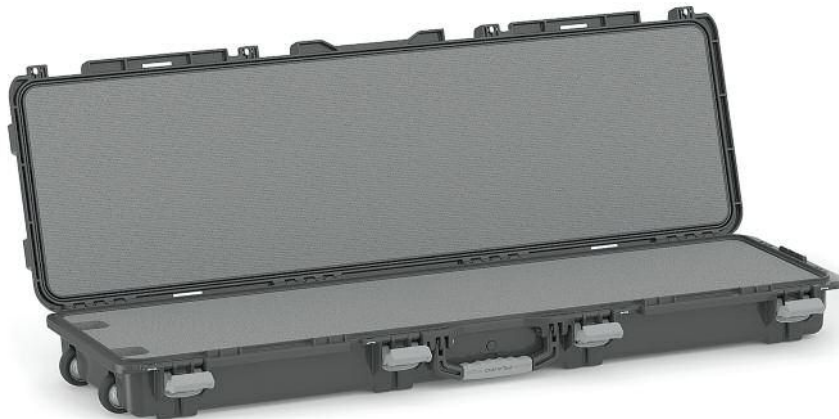


According to Caldwell, the Cross-Wind Professional Wind Meter was designed to be the best wind meter on the market for ballistic applications. This compact and portable wind meter reads current wind speed, average wind speed, maximum wind gusts, temperature and density altitude, altitude or barometric pressure. It measures wind velocity in mph, ft/min, km/h, m/s or knots; it's water resistant and features an LCD backlight.

Shooters need to know wind speed to more accurately judge shot placement in varying wind conditions. The 90-degree rotating anemometer head allows you to measure exactly how much cross wind will be applied to the side of your bullet without ever having to move the wind meter or make angle calculations.

A holster, which is included, protects the wind meter and keeps it handy. It operates on one CR2032 battery (included). For more information, visit www.caldwellshoot.com.

Plano Field Locker Mil-Spec Cases



For many years, transporting long rifle cases was a frustrating task, and humping them through airports was a truly onerous chore. Fortunately, cases are available today that offer top firearm protection and no-sweat portability.

Plano's new Field Locker Mil-Spec Case series is available in six sizes and configurations to protect everything from pistols to long guns and tactical firearms. Each case is carefully sized to fit and protect the firearms it houses.

Cases are formed using a molding process that produces a reinforced shell that's up to any task, including rugged handling and exposure to the elements. All Field Locker Mil-Spec Cases are watertight and dustproof. Secure sealing ensures firearms won't be adversely affected by water or dirty environments. Pressure Release Valves equalize pressure variances caused by changes in altitude or temperature.

Over-molded, heavy-duty handles defy breakage and reduce hand fatigue. Reinforced padlock gates deter thieves. Most padlocks fold flat. Each draw-down latch is built for durability, yet it's easy to open to allow the firearms to be inspected.

Double-density foam is fully customizable and can be configured to precisely fit your particular firearm, and each long gun case sports a pair of wheels for traveling. Six sizes are available. MSRP: \$94.99 to \$249.99, depending on size. For more information, visit online at: www.planomolding.com.

Bushnell Banner Riflescopes

Bushnell Banner riflescopes offer great performance at a reasonable price. What's more, these budget scopes just keep getting better as optical systems continue to improve.

Ron Bartlett's Original

Vais™ Muzzle Brake

Simply the best muzzle brake available!
**Most muzzle brakes reduce recoil,
but none as quietly as the Vais™.**

Now approved by professional guides & outfitters.

Available in .17 Cal. to 50 BMG,
and diameters from .650" to 1.50".
Installed prices start at \$275 for
stainless or blued. Dealer pricing
is also available
for Vais installed brakes,
or for brakes only
(to be installed by other
qualified gunsmiths).



Made
in the
USA

Ron Bartlett • 1529 CR 4513 • Hondo, TX 78861

Phone: (830) 741-7167 • Vais Arms, Inc • www.muzzlebrakes.com

USED BY TOP PROFESSIONALS:

Dakota Arms
Nesika Bay Precision
McMillan Bros. Rifles
Broughton Barrels
Hart Rifle Barrels
Bruno Shooters Supply
Lazzaroni Arms
Kelbly's Inc.
Bruce Baer
Gre-Tan Rifles
Krieger Barrels

Also Available:
Action Truing,
Rebarreling & Bedding

Banner scopes have multicoated optics for a bright, clear sight picture, even during the last minutes of daylight, and are constructed with a durable one-piece aluminum tube. Dry nitrogen-filled, they are 100 percent waterproof, fogproof and shockproof.

Windage and elevation adjustments can be made quickly with new quarter-MOA fingertip adjustable knobs. A new rubber-coated, fast-focus eyepiece allows shooters to conveniently fine-tune reticle focus. The higher magnification scopes in the line feature an

adjustable objective to compensate for parallax and maintain optimal image clarity at extended ranges.

The Banner rifle-scope family features 12 configurations, with a total of 19 models available. MSRP ranges from \$108.95 to \$279.95. To learn more about Bushnell Banner riflescopes, visit the prod-



uct section online at www.bushnell.com or call toll-free 1-800-423-3537.

Bear Swipe Assisted Openers



Bear OPS, a new division of Bear & Son Cutlery, now offers a pair of new tactical, assisted-opening knives that are ruggedly built and retain their sharpness under heavy use. Available in two sizes, these knives have satin-finished, modified drop-point blades made of Sandvik 14C28N stainless steel. The blades have a maximum hard-

ness of Rc 58-60, along with edge stability and rust and corrosion resistance. You can choose either a partially serrated or plain-edge blade. Handles are made of high-quality aircraft aluminum with a metal pocket clip.

The Model A-100 ALBK-S Bear Swipe has a 2½-inch blade and measures 4 inches closed. Weight is 2 ounces. MSRP: \$130. The larger Model A-200-ALBK-S has a broader 2¾-inch blade and closes

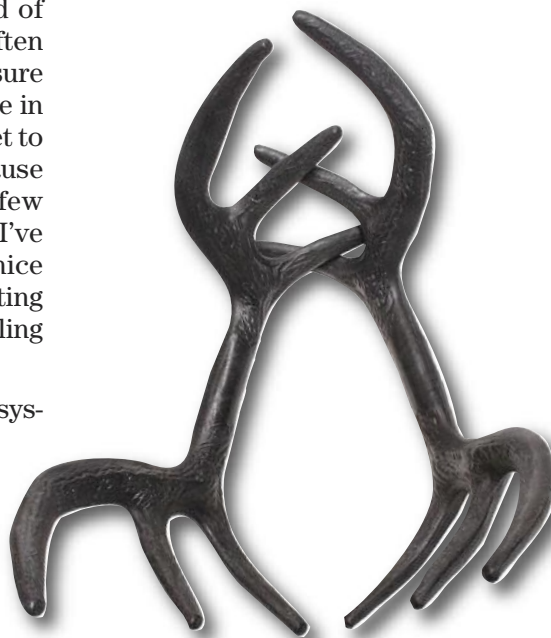
to a length of 4.25 inches. Weight is 2.6 ounces. MSRP is \$137.50.

I've used both versions, a Model A-100 with a plain blade and a serrated-blade Model 200. These knives have really impressed me. I generally prefer plain-edged knives for all-around use (including skinning), but the serrated blade does a great job of cutting through tough materials fast. The Model A-100 is sharp enough to shave with. For more information, visit www.bearandsoncutlery.com.

Black Rack Rattling System

Rattling simulates the sound of two bucks battling, and it often produces bucks in a hurry. It sure beats waiting and hoping. I live in the West, where rattling has yet to really catch on, partly because mule deer season occurs a few weeks prior to the rut. Still, I've managed to attract some nice bucks with this tactic. In hunting whitetails, I now consider rattling an invaluable tactic.

The new Black Rack rattling system from Flextone Game Calls offers several advantages over shed antlers. Most real antlers are light in color and can be seen from several hundred yards away when you're clashing them together. Black Rack antlers keep



rattling activities concealed as you try to draw a big buck in. Another plus is that you don't need to spend valuable time prospecting for discarded headgear. A set of Black Rack antlers should last a lifetime.

Patented Bone-Core Technology makes the Black Rack rattling system sound amazingly realistic. Unlike rattling bags that produce unnatural sounds, the Black Rack rattling system was designed as two full deer racks that create the illusion of two bucks crashing and fighting.

The Black Rack is available at dealers across the country, and for \$24.99, plus tax, online at www.flextonegamecalls.com. 

A Rifleman's Optics

(Continued from page 23)

tem to create magnification. The reticle is installed on the erector system, either in the front or the rear. The ocular can be adjusted (diopter adjustment) so the user can focus the reticle until it appears clear and crisp. The objective [on many scopes] cannot be adjusted by the user."

A firm cheek weld allows the eye to act as the rear sight and the reticle as the front. If a scope has parallax issues, it will be noticed when the target shifts from side to side of point of aim.

Says Seipp, "Most scopes come factory-adjusted [for parallax] at 100 yards, and objects at 100 yards are clearly visible with no 'swimming or floating' effect, provided that it is a good scope. At a distance significantly shorter or longer than 100 yards, the scope is no longer parallax free. This can be fixed by either making the objective adjustable (front focus parallax adjustment) or by adding a corrective lens in front of the erector (side focus parallax adjustment). Both options work well but also have disadvantages. The adjustable objective is difficult to reach when the scope is mounted on a rifle, and the side focus adds glass, which in turn reduces light coming to the eye.

"What marketing types do not tell you is that most hunters will not ever need parallax adjustment. A scope, aligned to 100 yards, will have about two inches of movement at 300 yards and four inches at 600 yards. Unless one is hunting prairie dogs at extremely long distance, hunters can do just fine without it. For target shooters, especially bench rest shooters, parallax adjustment is essential. Since they are not worried about reaching the objective, or low light transmission, either adjustment option is acceptable."

So while parallax is easy to understand, there is a caveat hidden here: "four inches at 600 yards." Missing point of aim by 2 inches

on the side of a deer or elk at 300 yards is almost irrelevant; a hunter cannot discern 2 inches at that distance anyway. A scope with a potentially built-in 4-inch deviation at 600 yards can be problematic if hunters are buying mega scopes to shoot game at that distance or farther, and today that seems to be the trend. Parallax adjustment obviously becomes critical for long distance shooting, but it also makes a hunting scope heavier and more expensive.

Additionally, if the scope is not mounted plumb with the bore, more lateral and vertical deviation is built into the bullet's path, especially if the rifle is unknowingly canted during a shot. Unlike the really long shots seen on television, where the shooter seems to have plenty of time to set up, most opportunities come quickly when hunting big game and can disappear just as fast. If the largest mule deer buck you've ever seen bursts from cover, will there be time to adjust power or parallax settings, range or estimate distance, then make sure the rifle is perfectly vertical or that your head is in the same position it was when the rifle was zeroed from a shooting bench?

Some hunters are also under the assumption that scopes with 50mm objectives automatically provide more light transmission. Consider this: Meopta lists its 4.5-14x 50mm MeoPro as providing 99.8 percent light transmission. Its 3-9x 40mm MeoPro, which fits in low rings on most rifles, is also listed with 99.8 percent light transmission (www.meoptasportoptics.com). Similarities exist among other brands.

If it sounds like I'm against large objective scopes, I'm not. Years of hunting experience have revealed, however, that most riflemen will do just fine at normal hunting ranges with a low-mounted scope and a stock that provides a consistent cheek weld. If a 50mm scope objective is necessary, a higher stock comb will provide the same results. R



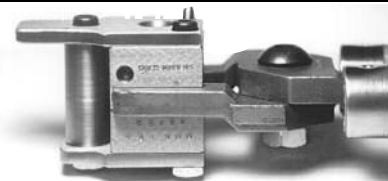
Claro and English Walnut Gun Stock Blanks

Highly Figured and Plain Grain

Cultivating Nature's Beauty!

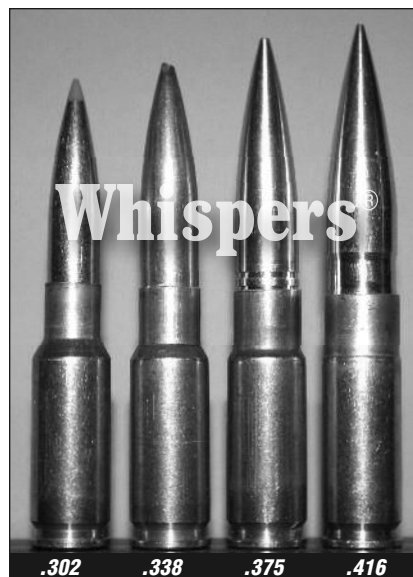
9009 River Road, Chico, CA 95928
Tel: 530-345-4012 Fax: 530-345-0990
www.winelandwalnut.com
winelandwalnut@hotmail.com

HOCH CUSTOM BULLET MOULDS



Tool room quality, nose-pour, most standard or custom designs made to order. Cylindrical (straight) or tapered. Rifle & pistol designs available.

COLORADO SHOOTER'S SUPPLY
Shop 575-627-1933 • Home 575-627-6156
910 N. Delaware • Roswell, NM 88201
davefarmer@hochmoulds.com
www.hochmoulds.com



Whispers® are developments of SSK Industries.

Custom barrels for Contenders, Encores, bolt guns and semi-autos as well as complete guns and the cans to keep them quiet are available. SSK chambers over 400 calibers. Wild wildcat ideas welcomed.

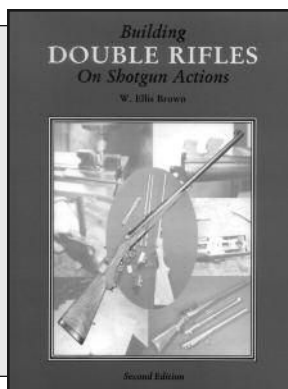
SSK Industries

**590 Woodvue Lane
Wintersville, OH 43953
Tel: 740-264-0176
www.sskindustries.com**

Building DOUBLE RIFLES on Shotgun Actions, 2nd Edition - By W. Ellis Brown

This book will take the gunsmith or advanced hobbyist step by step through the process of building a double rifle using the action of a side-by-side shotgun. Chapters include: evaluating actions and cartridges; building monoblocks; building associated parts; regulating the barrels to shoot to the same point of aim. Each step of the process is detailed, to end with a functional, well regulated, double rifle. HB, DJ, Large Format, 217 pages with over 300 b/w photos, color photos, and diagrams. \$54.95 + \$5.00 S&H. Colo. Res. add 3% sales tax (\$1.65) (For a signed copy, add \$3.00). Also available: 2006 Double Rifle Builders Symposium DVD and hollow ribs for double rifles (visit our web site).

Bunduki Publishing, 39384 WCR 19, Ft. Collins, CO 80524
www.BundukiPublishing.com Dealer inquiries welcome.



Mostly Long Guns

(Continued from page 13)

During my youth, diseased cattle, range bulls approaching 2,000 pounds, crippled horses, etc., had to be destroyed, and I soon learned the value of large-caliber cartridges with nonexpanding bullets on large, tough animals. As a result, cast bullets were used with confidence in the .45-70 while hunting Africa, which produced predictably outstanding results.

Cast bullets with a large meplat help increase the size of the wound channel, and if the meplat is proportionately correct for the caliber, it helps keep penetration arrow-straight and prevents the bullet from tumbling after impact. The speed that a bullet passes through an animal plays a significant role in the amount of shock delivered to the nervous system. This high-speed penetration shatters bones when they are hit, creating additional shock and secondary wounds. Since cast bullets penetrate so well, the exit wound promotes bleeding and leaves an easy-to-follow blood trail, if necessary.

For handloaders, several companies offer quality cast bullets intended specifically for hunting, and they are readily available for most calibers. Examples include Rim Rock Bullets, Oregon Trail Bullet Co., Cast Performance and others. Obtaining moulds and casting bullets is especially rewarding and can result in custom-tailored, high-performance bullets, not to mention considerable savings. Several specialized ammunition companies offer cast bullet loads for a variety of cartridges designed specifically for hunting. Examples include Buffalo Bore, Garrett Cartridges, Cor-Bon, Grizzly Cartridge and others.

Cast bullets produce little barrel wear, are accurate and can offer excellent performance on game. Give them a try – I'll bet you're not disappointed. 



CHECK OUR POWDER AND PRIMERS

- Starting to get regular shipments
- We allow back orders
- Keep checking our site
- Search by "In Stock Only"

MIDSOUTH SHOOTERS
SINCE 1969

WWW.MIDSOUTHSHOOTERS.COM
1-800-272-3000



Build Your Dream Rifle With Shilen

- Custom actions!
 - DGV (D@#% Good Varminter) Single Shot
 - DGR (D@#% Good Repeater)
- Award winning Shilen custom barrels.
- Shilen Triggers for hunting (1-1/2 — 3 pound) or competition (2 — 6 ounce).
- Please see our website for all Shilen products.

Black Iron Nitriding on all bolts equals less wear and tear & less chance of corrosion.

SHILENRIFLES, INC.
World Class Accuracy Since 1955
P: 972.875.5318 | F: 972.875.5402
comments@shilen.com | www.shilen.com
205 Metro Park Boulevard | P.O. Box 1300 | Ennis, Texas 75120

Classic Cartridges

(Continued from page 17)

2,750 fps. I practiced a lot with the Model Seven .300 SAUM in preparation for an elk hunt. For that exercise I shot 150-grain SSTs with 26 grains of SR-4759. The recoil of those loads was about the same as a .30-30 WCF. Even though the light charge of powder only partially filled cases, velocities varied only 25 to 70 fps.

For hunting elk I switched to Barnes 180-grain Triple-Shock bullets loaded with 62.0 grains of W-760. With a muzzle velocity of 2,878 fps and hitting 2 inches above aim at 100 yards, I could pretty much forget about bullet drop out to 325 yards. However, in the lodge-pole pine thickets where I was headed, a more likely shot would be at one-fifth that distance.

The last morning of the hunt the black legs of a bull glided through a gap in the trees. For long minutes all was quiet. Then the bull was



Remington's .300 SAUM factory loads shot accurately from a Model Seven.

above me, raking trees with its antlers. When it stepped into the clear at 40 yards, the bullet hit the elk on the point of its shoulder. It spun away, but it only stumbled 40 yards – dead on its back.

For five days I had carried the Model Seven. At slightly over 8 pounds, with a Kahles AH 3-9x 42mm scope in Conetrol steel rings and bases, the rifle never held me back climbing up one ridge and on to the next. Add the .300 SAUM's good accuracy

Table II **Select .300 Remington SAUM Handloads**

bullet (grains)	powder	charge (grains)	velocity (fps)
150 Hornady SST	IMR-4350	65.0	3,149
165 Hornady BTSP	H-414	65.5	3,148
165 Sierra HPBT	IMR-4831	65.5	3,111
180 Barnes Triple-Shock	W-760	62.0	2,878
180 Hornady InterBond	IMR 4350	62.5	2,893
180 Sierra Pro-Hunter		61.0	2,814
200 Nosler AccuBond		60.5	2,733

Be Alert – Publisher cannot accept responsibility for errors in published load data.

and plenty of velocity, and it's hard to imagine what more a hunting rifle can offer. The cartridge's only problem was timing. R

WORLDWIDE PRECISION

norma®

SMOKELESS POWDERS

Western Powders is North America's exclusive distributor of Norma Powders. Developed in Sweden, this premium powder is trusted worldwide and is available at retailers where Western Powders' products are sold.

Premium Performance in Every Shot.



www.normapowder.com

CTK PRECISION
715-754-2891
ctkprecision.com

CNC MACHINED ALU.
TWO STAGE DESIGN
ROTATING FOOT
LIGHT WEIGHT 5.6 OZ
HARD ANODIZED
360° OF MOVEMENT
AT 100 YDS
ELEVATION RANGE
3.46° TO 6.38°

NEW

**CTK ULTIMATE
RAIL-POD**



Walnut Hill

(Continued from page 70)

the Whelen used the aforementioned double brass hook, the Latigo employs a brass screw and nut. Once this is tightened snugly, it requires pliers and screwdriver to loosen, which is good on a hunting rifle. When the sling is set to satisfaction, you can then cut off the extra leather. Since almost

every rifle today uses detachable sling swivels, having three or four Latigo slings, each adjusted to a different length, allows moving them around from rifle to rifle. In the old days, you needed a sling for each rifle. Presumably, after adjusting three or four, you knew how it was done. Either that, or you were in an asylum.

Europeans used slings on hunting rifles for many years before the Springfield came along, but they were little more than floppy carrying straps. Some had detachable hooks so the sling could be removed before beginning a stalk or when you broke the rifle down to store in its case. These were handy, to a point, but were neither convenient nor any aid to accurate shooting.

The so-called “hasty” shooting sling is nothing but a strap that loops around the left elbow; the hand is then pulled back on the forend until the sling is taut. I never found it much help. It cannot be the right length for both shooting and carrying, so something is always a compromise. Since any hunting rifle is carried more than it’s shot, the sling was usually set for carrying, and the shooter’s hand position was then altered to accommodate it. This is really the tail wagging the dog.

The Whelen sling had another great virtue, which is that it can easily be manufactured from nylon or some other synthetic material, instead of leather. It doesn’t work well with the old military cotton webbing, because it doesn’t slide easily, but there’s no reason not to have one made of black, olive or camo synthetic.

For some reason, modern sling manufacturers have insisted on reinventing the wheel – almost always with dubious results. In recent years, the so-called “cobra-style” sling has become ubiquitous, with ever-more extreme variations of width and ornamentation. These are one of the most questionable attachments ever conceived for a rifle. Making a sling wider where

**Quick Measure
Progressive Adapter**

Mount the popular Quick Measure on your Progressive Press



Use long extruded powders like 4831
Our Bridge Breaker eliminates powder jams
Load any caliber - even 17 and 20
Change charges in 20 seconds
Move to another tool head in less than 60 seconds
No need to purchase multiple measures
.1 grain accuracy with extruded powders

Johnson Design Specialties
4607 W Elderberry Avenue
Spokane WA 99208
(509) 464-0697
www.quick-measure.com



Made in the U.S.A.

3-MONTH FREE SUBSCRIPTION

Shotgun Sports
MAGAZINE

800-676-8920 CALL NOW!
Mention Code: HL15

(530) 889-2220 • Fax (530) 889-9106 • custsrv@shotgunsportsmagazine.com
P.O. Box 6810 • Auburn, CA 95604 • A 1-year subscription (12 GREAT issues!) is 32.95!

www.shotgunsportsmagazine.com



NEW SUBSCRIBERS ONLY / Request A Free Catalog

it rests on the shoulder makes it more difficult and uncomfortable to carry, not the reverse. They cannot be readily adjusted for length, and because they are absurdly wide and often padded as well, they are clumsy and get in the way. They are no aid to shooting whatever, unless you can wrap them around your arm hasty-sling style. Many of these things now have pouches and cartridge loops, and makers' names embossed on the wide part, becoming little more than movable billboards. Practically speaking, the whole tribe can be dismissed as useless.

Other sling makers have genuinely tried to come up with designs that serve a useful purpose but usually without much success. At a hunting show in the 1980s, I came across a sling called the Viper, which was designed to carry the rifle across your body in such a way that it could simply be flipped around and up to your cheek, and the sling would automatically assume a shooting position to steady your arm. Being younger and more gullible, I bought one, tried it a couple of times, then put it away and forgot about it.

The problem was that the carrying position was neither natural nor comfortable, the design of the sling was such that you really couldn't use it any other way, and it did not allow for carrying anything else, like a pack or binocular. This is typical of many of the highly specialized shooting slings now on the market. They may work as advertised, but it's either that way, or no way.

A great advantage of the old military, Whelen or Latigo slings is that they can be lengthened to allow carrying the rifle across your back, Cossack-style, or on the shoulder in the usual position. This is of immeasurable value when trying to drag a dead deer, or carry a backpack, or any of the other hundred things a hunter does that the armchair sling designers never take into consideration.

Since the cobra sling has degenerated into a fashion statement, when you walk into a hunting camp and look at the rifles on the rack, you can tell instantly who's done a lot of hunting and who hasn't. An elaborate cobra sling is almost invariably the mark of a hunter who doesn't get out much. 

RUGER M77 MKII ADJUSTABLE TRIGGERS
Standard or Target Triggers • All Calibers



"The first and still the best aftermarket trigger for Ruger bolt guns"

Spec-Tech Industries Inc.
Tel: 360-303-9077 • spec-tech-industries.com

Learn Gunsmithing

- AAS Degree
- 2-Year Certificate

NEW FACILITIES!

For More Information:
www.gunsmithing.org
1-800-922-6787 ext. 7761
email: alan_lohr@yc.edu



Yavapai COLLEGE
Your community. Your college.

220 Ruger Rd., Ste. 1
Prescott, AZ 86301
www.yc.edu YC 295 02

REBORING by JES Rifle Boring

We specialize in the reboring of Lever-Action, Single-Shot, Pump, Bolt-Action and selected Semi-Auto rifles. 338-50 calibers.

www.35caliber.com
541-942-1342



AD INDEX

4D Reamer Rentals, Ltd.....	60	Ed LaPour Gunsmithing.....	61	Quality Cartridge.....	61
Americase, Inc.....	39	Gamaliel Shooting Supply.....	28	Radarcarve.....	20
Battenfeld Technologies.....	34	Gebhardt Machine Company.....	40	Redding Reloading Equipment.....	23, 35
Berger Bullets.....	45	Hagstrom Gunsmithing.....	11	Rigel Products.....	41
Black Hills Ammunition.....	9	Harry Lawson LLC.....	15	Rim Rock Bullets.....	51
Black Hills Long Range Rifle Shooting School.....	32	Hatsan USA, Inc.....	13	RMS Custom Gunsmithing.....	41
Blues Brothers.....	21	High Plains Reboring & Barrels, LLC.....	29	S & K Scope Mounts, LLC.....	10
Boyd's Gunstock Industries, Inc.....	72	Hill Country Rifle, Inc.....	29	Score High Gunsmithing.....	10
Buffalo Arms Company.....	29	Holland's Shooters Supply, Inc.....	53	Sheep River Hunting Camps.....	62
Bunduki Publishing.....	66	IMR Powder Company.....	3	Shilen Rifles, Inc.....	66
C. Sharps Arms Co.....	61	James Calhoun Mfg.....	41	Shotgun Sports.....	68
Claro Walnut Gunstock Co.....	35	JES Rifle Boring.....	69	Sierra Bullets.....	21
Classic Barrel & Gun Works.....	41	Johnson Design Specialties.....	68	Skinner Sights.....	16
Classic Checkering.....	40	Jon Trammel's Gunsmithing.....	34	Sou'Wester Outfitting.....	21
Colorado Shooter's Supply.....	65	K & M Precision Shooting Products.....	12	Spec-Tech Industries.....	69
Conetrol Scope Mounts.....	35, 53	Leadheads Bullets.....	15	SSK Industries.....	65
Cooper Firearms of Montana, Inc.....	47	Levergun Leather Works.....	10	Stocky's, LLC.....	52
CTK Precision.....	68	Little Crow Gunworks, LLC.....	15, 53	Sturm, Ruger & Co., Inc.....	7
Custom Brass and Bullets.....	11	LRK Mechanical, LLC.....	34	Sunny Hill Enterprises, Inc.....	14
D & B Supply.....	15	McMillan Fiberglass Stocks, Inc.....	46	Swift Bullet Company.....	5
Dale Fricke Holsters.....	70	Midsouth Shooters Supply Co.....	66	Talley Manufacturing, Inc.....	41
Dave Manson Precision Reamers.....	60	New England Custom Gun Service.....	11	Timney Triggers, LLC.....	20
David Christman (gunmaker).....	40	Nosler.....	2	Turnbull Restoration & Manufacturing Co.....	19
Dayton Traister Trigger Co.....	53	Nu-Line Guns, Inc.....	21	Vais Arms, Inc.....	63
Dem-Bart Checkering Tools, Inc.....	34	Optical Services Co., Inc.....	40	Western Powders.....	17, 27, 33, 67
Dennis Erhardt, Custom Guns.....	35	Pacific Tool & Gauge, Inc.....	11	Williams Gun Sight Company.....	10
Dennis Olson, Gunsmithing.....	61	PMA Tool.....	61	Wineland Walnut.....	65
Douglas Barrels, Inc.....	61	Preslik's Gunstocks.....	60	Wolfe Publishing Company.....	54, 55, 61, 71
Ebonex Corporation.....	29			Yavapai College.....	69



SLING, SLANG, SLUNG

WALNUT HILL by Terry Wieland

If there is one shooting aid for which Americans deserve 100 percent credit, it's the rifle sling. No other single item can do so much to improve your shooting, with so little extra effort.

Although a historian might trace its origins to the military Springfield more than a century ago, most of the credit for the civilian version belongs to Col. Townsend Whelen. He took the wide, heavy, complicated, leather Springfield sling and simplified it, creating what came to be known, and widely marketed as, the "Whelen sling." If there could be only one sling design in the world, by some sort of universal decree, the Whelen would be the one to keep, although I would vote for Brownells' latigo-leather adaptation of it.

For those who have never used a sling as a shooting aid, the principle is simple. The sling is attached to the rifle fore and aft, and a loop about halfway along is slipped over the left arm (for right-handers) and up above the elbow. The left hand then loops around the sling and grasps the forend, pressed up against the sling swivel. Properly adjusted, the sling will be tight from the arm to the forend, but

slack from the arm back to the buttstock. For prone or shooting from the sitting position, the sling is a great aid. In some forms of kneeling, it also helps, but does the least when shooting offhand.

The great virtue of the Whelen is that, like the military sling, it can be lengthened (for carrying or shooting) or shortened (for drill, or to stop it flopping around and catching on things) with a couple of quick tugs. There are many variables, including the distance between the sling swivels and the length of the shooter's arms. These are accommodated by the seemingly infinite variations possible on either the military or Whelen slings. They are two-piece, with row after row of double holes, into which you slip a brass double-hook.

Having wrestled with these things since age 16, when I acquired a military P-17 and went to great lengths to get the sling adjusted properly, I can attest to the difficulty. There are no real instructions, to the best of my knowledge. It is all trial and error. A recruit assigned to get his rifle sling adjusted correctly could look forward to many frustrating evenings, un-



Slings of various ages: foreground, the Brownells Latigo sling, a variation on the classic Whelen. Next is a civilian version of the old two-piece military sling; then two variations on the European strap, one of braided leather, the other a Lawrence basket-weave.

less he found a sympathetic NCO to help.

For the sake of simplicity, from here on I'll use the Brownells Latigo as an example. True Whelen-style slings are becoming hard to find, and modern variations often make changes for the sake of ease of manufacture, or to cut costs, rather than improve them. Fortunately, older ones are easy to find on the various auction sites, with the best one I know of being the old George Lawrence leather.

Where the Latigo differs is mainly in the method of fastening the loose end. Where the military and

(Continued on page 68)

DALE FRICKE

HOLSTERS

"As for me and my house we will serve the Lord!" ~ Joshua 24:15






Holsters you can bet your life on!!!

Kydex Holsters: Inside or Outside of Waist Band • Magazine Pouches • Purses • Custom Products

www.dalefrickeholsters.com • 406.600.2712 Use code WOLFE for 10% discount!

The Upland Almanac

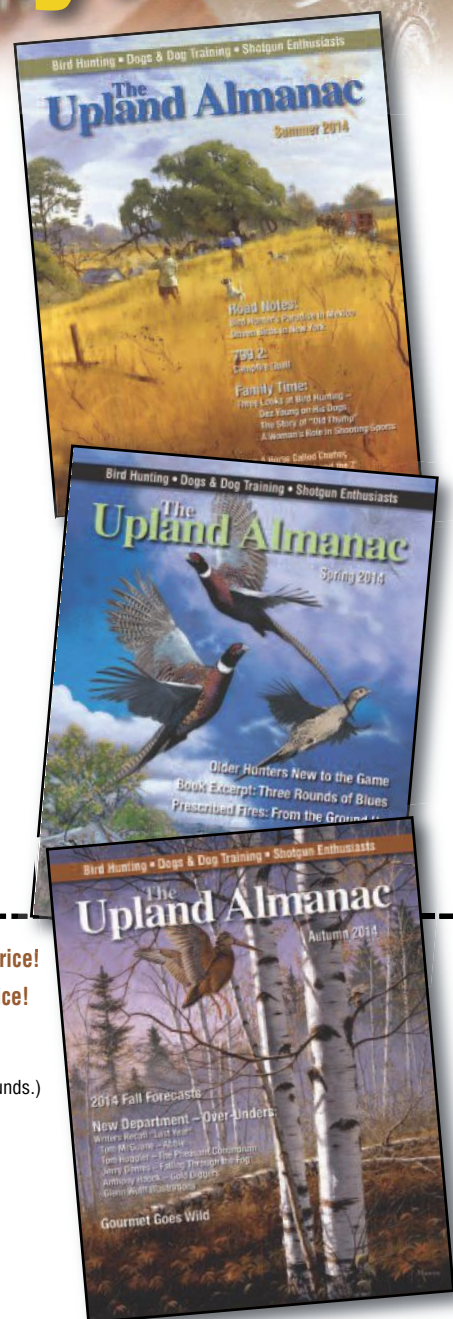
Bird Hunting • Dogs & Dog Training • Shotgun Enthusiasts

The newest member of our family!

Acclaimed by upland enthusiasts everywhere, *The Upland Almanac* joins the Wolfe Publishing family of sporting firearms, handloading and hunting journals. It comes to you quarterly with great articles on bird hunting destinations; dog handling, training and health; fine shotguns and shooting tips; product reviews; culinary secrets; and lots of entertaining writing.

Now in its 15th year, *The Upland Almanac*, along with its sister publications *Rifle*, *Handloader* and *Successful Hunter*, continues to celebrate our great shooting and hunting traditions.

DON'T MISS AN ISSUE! Take advantage of the current low rates and subscribe today, **FOR YOURSELF** or as a **GIFT!**



Subscription is for: ☐ Myself ☐ Gift

Name _____

Address _____

City _____

State/Province _____ ZIP/Postal Code _____

Email _____

Commence subscription(s) with:

☐ Current Issue ☐ Next Issue

Please insert this coupon with payment into an envelope and mail to: **Wolfe Publishing Company, 2180 Gulfstream, Ste. A - Prescott, AZ 86301**
Subscribe online at www.uplandalmanac.com or call toll free 1-800-899-7810.

☐ 2 years (8 issues @ \$44.95) • **Save 37% off cover price!**

☐ 1 year (4 issues @ \$24.95) • **Save 30% off cover price!**

Canada & Mexico: ☐ 2 years (\$74.95) ☐ 1 year (\$39.95)

Other Foreign: ☐ 2 years (\$84.95) ☐ 1 year (\$54.95)

(Allow 6-8 weeks. Subscribers outside the U.S. please pay in U.S. funds.)

☐ Check Enclosed ☐ Payment by Credit Card

☐  ☐  ☐  ☐ 

Card Number _____

Expiration _____

Name _____

Billing Address _____

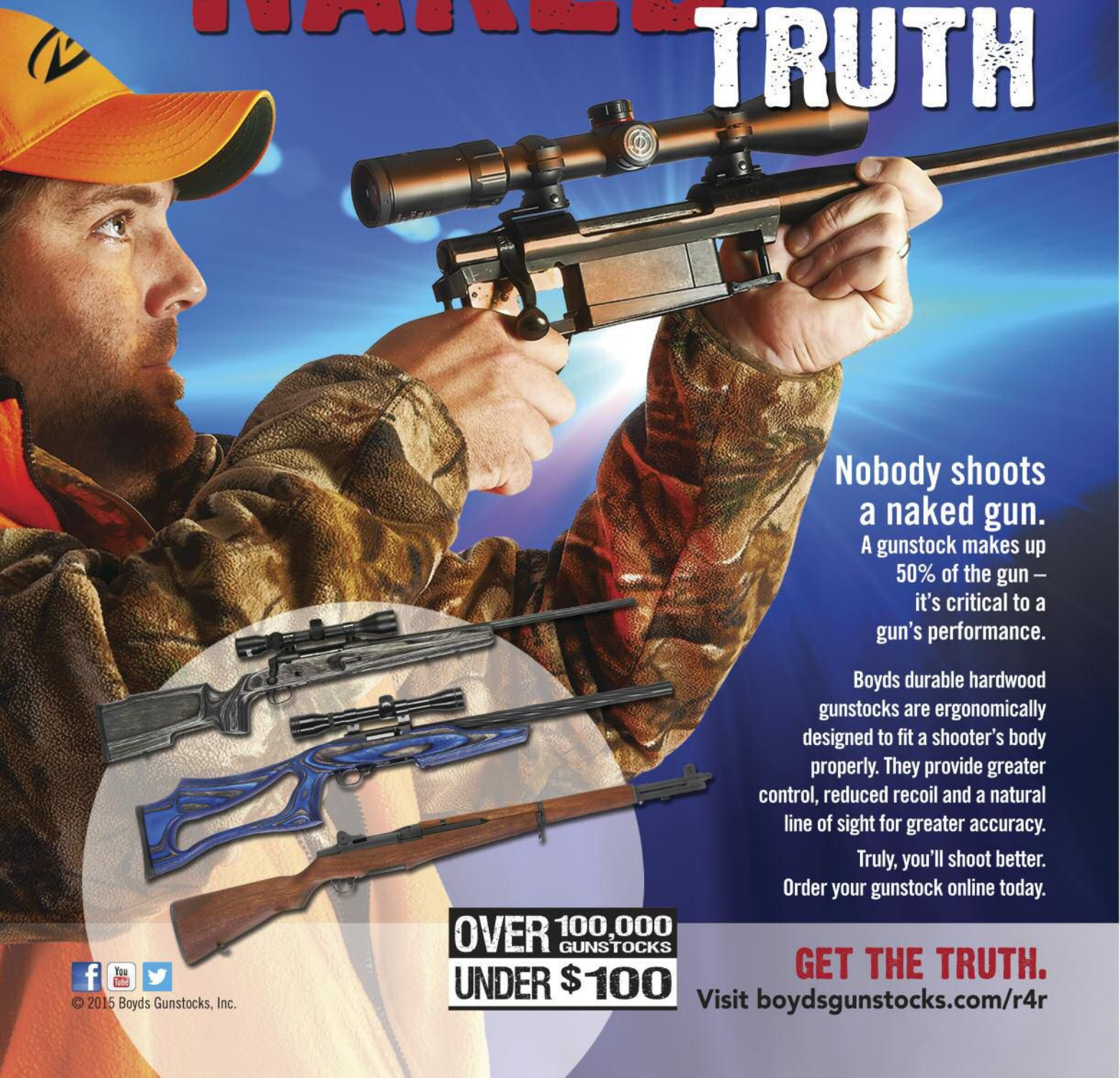
City _____ State/Province _____

ZIP/Postal Code _____ Tel. No. _____

UAMAG15



THE **NAKED** TRUTH



**Nobody shoots
a naked gun.**

A gunstock makes up
50% of the gun –
it's critical to a
gun's performance.

Boyd's durable hardwood
gunstocks are ergonomically
designed to fit a shooter's body
properly. They provide greater
control, reduced recoil and a natural
line of sight for greater accuracy.

Truly, you'll shoot better.
Order your gunstock online today.



**OVER 100,000
GUNSTOCKS
UNDER \$100**



© 2015 Boyd's Gunstocks, Inc.

GET THE TRUTH.
Visit boydsgunstocks.com/r4r